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THE BUILDER

A JOURNAL FOR THE ARCHITECT AND CONSTRUCTOR.

WITH WHICH IS INCORPORATED "THE BRITISH ARCHITECT."

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SOME REFLECTIONS ON ECONOMICS.

DURING periods of acute trade depression no apology should be needed for repeated references to the economic conditions which affect our livelihood and our outlook upon life. The prospects of the building trade largely depend upon conditions of trade and finance, and in the initial stages the architect to-day is more likely to be troubled with economic problems than with architectural details. Architectural education is gradually reaching a higher standard, but at the moment we feel that there is a growing disproportion between the shifting values of architectural knowledge and that of political economy. It is merely stating a truism to say that the general conditions of trade and finance, if they do not actually govern architecture, at least govern the building trade.

The economic position has aroused a great amount of interest, and probably never were so many books written upon the subject as during the past year or two. It is a general complaint that most of them are mainly concerned with explaining what has already happened, whereas most of us want to be able to form an opinion upon future developments. If political economy is assumed to be a science, economists ought to be able to give a useful forecast of probable developments in prices, wages, and the conditions of trade, instead of merely recording what has happened. It is easy to be wise after the event and say that it was perfectly clear that there was bound to be a big fall in prices, but it is difficult to say what was really thought two years ago. There was an impression that the war had been so much bigger than any previous war that, therefore, past experience could not be taken as a guide, and that labour, having tasted the joys of higher wages, would never agree to accept anything approaching pre-war rates again, or even agree to any reductions. It was popularly assumed that the whole basis of living had risen and that more money and better conditions could be obtained by working fewer hours and reducing the production.

When the armistice was signed there was a general expectation of booming trade to make good the huge waste of the war; instead, there was an alarming collapse in prices. Afterwards, when the boom in trade developed, there was no thought of any collapse at the beginning of 1920; yet a mysterious slackening set in as the year went on, and for the past two years there has been an almost uninterrupted fall in prices, the degree of unexpectedness being measured by the world-wide embarrassment it has caused. Apparently no one wanted the big fall in prices; yet no one has been able to stop it, and it has pursued its relentless course, bringing untold losses to employers of labour and an immense amount of unemployment and misery to the workers.

At present there is almost universal agreement that the worst of the depression is over and that an improvement may be confidently expected, but we wonder if this view is more than a hope based on the ground that there has been some improvement already. It is well known that when trade is good there is a rise in prices, but it is not certain that the public is correct in believing that prices rise because trade is good; it may be that trade is good because prices are rising. This apparent inversion of cause and effect is not an attempt to split hairs—it may mean the difference between a right and a wrong conclusion. Regarding wages, it is generally assumed that wages are a definite charge calculated in the cost of an article, but, if this is so, it is difficult to see the reason for all the reductions in wages which have recently taken place. If prices cannot be kept up to cover the higher wages—and it has been observed that prices of commodities decline before wages are reduced—it would appear that there must be some other force at work governing prices.

These intriguing points, among many others, are dealt with in a book, "Prices and Wages,"* published last year, a book which we mention because it is remarkable for the originality of its economic outlook, a characteristic sadly lacking in the general run of present-day economic writings. The theory which the book sets out to prove is that the prices of commodities depend finally upon the amount of labour necessary to produce them, and, gold being the recognised standard of value, the cost of production is, therefore, measured by the labour cost of producing gold. In reading the book we are struck by the immense amount of thought and the careful collection of data which have gone to the working out of the theory. The authors in their preface say:—

> "It was felt that the failure of economists to satisfactorily account for price and trade fluctuations was due to the overlooking of some phenomenon that was apparently of so small importance that it had not been adequately investigated by economic students. The locating of this 'leaven' of price variation in the labour cost of gold is perhaps a new economic idea, and the attempt to substantiate the theory by experiment is probably unique in economic method. The collecting of evidence and gradual development of the theory and experiments has been the work of many years, and has been found a study of absorbing interest and considerable profit."

The theory—which we do not pretend to understand in detail—suggests many interesting points. Assuming that it is correct and that commodity prices are governed by the labour cost of producing gold, the inference is that prices must return to the gold basis, *i.e.*, to their pre-war level. We are aware that during the past year or two this would have been scoffed at as a fantastic idea, yet all the while prices have been falling in a disconcerting and unexpected manner, a fact which suggests that there may be something in the theory. The general view, when prices and wages were high, was that prices could never get back to the old level simply because the workers would never agree to accept the reductions which would have to be made in wages. Experience is already proving that this view was mistaken. If wages were a deciding factor in fixing prices it is clear that prices would not fall whilst wages remained high; but what has actually happened is that prices did fall and employers found it impossible to continue producing profitably until wages were reduced. Works and mills had to be closed until the necessity for lower wages was realised. The authors do not suggest in the book that the workers were at fault any more than the masters; the inference is that there was a general misunderstanding on both sides. If employers felt reluctant—as many of them did—to press for reductions in wages, the result was exactly the same as if they had insisted on the reductions and the workers had gone out on strike. In both cases production had to be stopped until lower wages were accepted. The writers of the book realised that, if their theory was correct, there ought to be a possibility of forecasting the price of a commodity, given the necessary data regarding its production, but the difficulty, apparently, was to secure the particulars in time to be of use. In American cotton they found a commodity which answered requirements fairly well, and the book contains a full report of their efforts to forecast its price over a number of years. The results are sufficiently striking to call for close study.

The whole tenor of the book leads us to conclude that the authors should be in a position to put forward useful indications as to the general trend of prices and trade in a period of wide fluctuations like the present. Though the authors do not specifically deal with the building trade in detail several pages have been devoted to show that their theory of the proportionate distribution of wages and profits applies equally to buildings as to other commodities.

Though we call attention to the book because of the freshness of its outlook, it is by no means easy to understand, and an acceptance of its views would necessitate the destroying of many economic ideas which are generally accepted as axioms. The careful reader, however, will find interesting new channels of thought, and may be able to work out in some measure the application of the theory to existing economic conditions. Taking into consideration the amount of labour involved in working out and recording the theory, we feel that the authors would be well advised to consider the publication of a smaller supplementary work explaining the significance of their theory both in relation to the present economic situation and its bearing upon the general outlook.

* "Prices and Wages." By Percy and Albert Wallis. London: P. S. King & Son. Pp. xii, 456. Price 25s.

V.123.

NOTES.

Unification and Registration.

THE Council of the R.I.B.A. at its meeting on July 3, passed the following resolutions which, we suppose, are the natural outcome of the recent election:—(1) That this Council considers the scheme of the Unification and Registration Committee is contrary to the best interests of the public, of architectural education and practice, and the Royal Institute of British Architects in particular, and is of the opinion that the Committee should be dissolved. (2) That each member of the Unification and Registration Committee be thanked for his services, and his appointment cancelled. (3) That a Committee be appointed of members of the R.I.B.A., with power to add to their number and to co-opt, if necessary, non-members of the R.I.B.A., and to obtain expert advice, to draft a Registration Bill with a view to its being deposited in November, 1922. (4) That a small Committee be formed to consider the revision of the Charter and By-laws, and to report to the Council at the earliest possible date. The Committee to have power to add to their number and to take expert advice. The new Charter to provide for equal voting powers for all corporate members, etc. A note to be inserted in the "Journal" asking Members to send any suggestions to the Committee.

Modern Architecture.

No serious criticism of modern architecture can be entertained without raising issues as to styles and materials, on which there would be much divergence of opinion. Some argue that such control as is exercised in cities abroad, as expressed, say, in the Rue de Rivoli, would be unsatisfactory here, because of its suppression of individuality and picturesqueness which seem to be part of the un-Classical British character. Thus Sir Reginald Blomfield's articles in the *Morning Post* are stimulating in their criticism and suggestions. He evidently thinks shop-keepers might profit by the advice of architects; he thinks a city would vastly gain in beauty and dignity by a control of new buildings which would prevent one building owner fighting against another for conspicuous effect, and he says, surely with some truth, that we have often preferred to use cement or stone for frontages when brick would have been better. We doubt if a better example could be found of a sane English citizen than Sir Reginald Blomfield, but we are inclined to question whether his study and love of French work have not produced a much more academic point of view than that entertained by most of his countrymen.

Reticence in Architecture

THERE is much to be said for the orderly control of, and reticence in, the architecture of some of our main streets, such as a Whitehall or a Pall Mall, for Government offices and clubs, but one cannot easily disabuse the British mind of its innate love for the picturesque and accidental; we cannot doubt that Norman Shaw's corner of St. James's-street, opposite the Palace, or Mr. Dawber's insurance offices a little farther down Pall Mall, are very welcome reliefs from the dull monotony of so many street frontages. We need the censor, no doubt, but we are afraid of him. We have seen a brilliant design highly approved of by a small group of experts who each critically proceeded to extract the various features that made its excellence. Possibly some knowledge of architecture came more into the range of accomplishment of men of culture in the eighteenth century, but we doubt if there was a more insistent demand for better architecture then than now. Indeed, the demand for good domestic work is probably greater and more intelligent than ever before, and our business men are keenly alive to the value of distinction in their buildings, much as they may misunderstand wherein true distinction lies. Of sound impartial criticism, from expert and lay alike, we cannot have too much.

The Four Courts.

IT is not our custom to comment upon political affairs, but when direct action is taken to the extent of causing the destruction of one of the most beautiful buildings in the world we cannot remain silent. Dublin contains unique examples of the finest eighteenth-century work; among these the Custom House, recently burnt down, and the Four Courts are pre-eminent. The destruction of the latter must rank among the worst outrages in the history of architecture. The responsibility lies with those who seized the building and held it as a hostage, shielding themselves behind its beauty.

Dublin Buildings.

WE know from war experience that buildings can stand an extraordinary amount of gunfire and battery without being really reduced to ruins, and we can only hope that the Four Courts is not beyond repair. One of the first acts of the new Ireland, on the restoration of order, should be the rebuilding of the Custom House and the Four Courts, and we sincerely hope that they will be re-erected as they were. The Custom House façade stands, the dome has disappeared, and possibly the Four Courts is by now in little better condition. Both of these buildings must have been frequently measured up, and it would be a calamity to the world if they are to be lost to us in their original form.

Renaissance Building.

IN his new book, "The Renaissance of Roman Architecture," Sir T. G. Jackson has touched on a subject of much importance. He tells us that "In the main all the early Renaissance buildings we have hitherto considered are really Gothic buildings, for all that they are bedizened with classic orders." This is true in a degree of St. Paul's Cathedral. As has been pointed out, the Renaissance in England was "but the bewilderment of a native art with foreign fashions of ornament." Architecture had lost its virtue when it sought to adorn itself in foreign fashions—had lost its innocence and gradually corrupted itself until it reached the suburban villa. It is not in being bookish but in being intuitive, not in being eminent but in being innocent, that the loveliest architecture weaves itself; and it

The Four Courts, Dublin. JAMES GANDON, Architect.
[This building was practically destroyed in the fighting in Dublin last week.]

From the Exhibition at University College.
(*See p.* 22.)

is perhaps only when we have shed all the disguises of picturesque and derivative ornament, in our failure and poverty, that we shall find again, stripped bare, the way to ourselves and therefore to inspired expression. To build for use, for which our uninspired and bookish erudition helps us so little, will, though it makes great changes in the status of the architect, give us architecture again.

A London Vista.

ONE of the most delightful possibilities, of which there are so many in our London streets, would be an uninterrupted view through Charles-street across St. James's-square, and down King-street. We were strongly impressed by this on a sunny morning recently, when it seemed that any possible loss to the landlords or tenants in St. James's-square would be incomparably less important than the public gain in continuing the line of thoroughfare of Charles-street and King-street right across the Square. Other similar cases are to be found and have been wisely insisted on, but no well-wisher for the general amenity of London could fail to be impressed with the advantages of such a simple improvement as that we have suggested.

Art in Oxford.

PROFESSOR PERCY GARDNER'S recent letter to the Press in reference to art at Oxford is not cheerful reading, for he tells us that the feeling for beauty is almost eclipsed, and that art is regarded by the undergraduates as something fit "only as an elegant accomplishment of young ladies." In a city so full of associations to inspire the love of beauty this is to be regretted. We shall not, however, lose courage on this account. It may be that the work of our time is best spent in laying new foundations for life out of which it will grow, rather than in producing it. It was said by the late Sir William Harcourt that "we are all socialists now," and in a sense we are all artists, but it is in a sense which includes little of the essential values of art. Abuses run their course, and commercial degrees no doubt appear more important than that which is so remote from our present doing and thinking. But abuses also cure themselves, and it may well be that when the commercial ideal has run its course its inadequacy as any sufficient interpretation of the needs of life will appear. "At the time of buying and selling, glass is glass and jewels are jewels," and then, perhaps, to quote once again from the East: If we have enough money for a loaf, we shall buy half, bestowing the rest on a bunch of narcissus.

Titanium White.

MR. NOEL HEATON, in his interesting address at the Society of Arts, gave a good account of this new paint material, and was able to demonstrate the remarkable opacity of titanium oxide and its possible value as a pigment. He showed how the titanium can be completely separated from the iron, and that a pure titanium white can now be produced, brilliant and pure in tone, without any yellowing tendency. It will resist the attack of sulphuric acid and is not subject to discoloration, and the lecturer, therefore, predicted great durability for the paint made from this pigment. He also claimed for it that it was not only suitable for house painting but for methods of painting where none but the most permanent pigments is admissible such as true fresco painting, where the pigment has to stand the action of caustic lime. It would appear that there is a great future for a paint material like titanium white, which is non-poisonous and not more expensive, and the only disability—that of slow drying—could, no doubt, be overcome by dryers. We shall be interested to watch the prospects of this material, and to know when it is obtainable.

New Associate of the R.A.

ARCHITECTS will learn with pleasure of the election of Mr. Frederick Landseer Griggs to an Associateship of the Royal Academy. Mr. Griggs is well known to architects, for whom, from time to time, he has made many beautiful pencil and pen-and-ink drawings of their work, some of which have quite recently appeared in our pages. Mr. Griggs illustrated many of the "Highways and Byways" series published by Macmillan, which are now much prized. Latterly he has turned his attention, with much success, to etchings, principally of architectural subjects, which he renders with skill, feeling and knowledge of his subject.

Kensington War Memorial.
MAJOR H. C. CORLETTE, F.R.I.B.A., Architect. (*See p.* 11).

GENERAL NEWS.

New Restaurant and Tea Rooms, Zoological Gardens.

In some portion of our issue of June 30, this building was referred to as the New Aquarium. We are sorry to say this is incorrect, the building illustrated being the New Restaurant and Tea Rooms. We much regret the error and trust the Zoological Gardens Authorities and Mr. J. J. Joass, the architect, have not been put to any inconvenience in the matter. The contractors were Messrs. J. Jarvis & Sons, Ltd., of 253 and 255, Hackney-road, London, E.2.

An Architect's Estate.

Mr. Lacy William Ridge, of Liverpool-terrace, Worthing, architect and surveyor for the Diocese of Chichester, formerly a member of the Holborn Borough Council, left estate value £2,498.

New A.R.A.'s.

At a General Assembly of Academicians and Associates of the Royal Academy held on Monday Mr. Frederick Landseer Griggs and Mr Henry Macbeth-Raeburn were elected Associate Engravers.

Rome Scholarship in Engraving.

The Rome Scholarship in Engraving for 1922 has been awarded by the Faculty of Engraving of the British School at Rome to Mr. Robert Sargent Austin, a student of the Royal College of Art.

Cambridge War Memorial.

The Duke of York, on Monday, unveiled the war memorial erected in honour of those who went from the county of Cambridge, the Isle of Ely, and the town and University of Cambridge to serve their country. The memorial consists of a solder in full war kit returning home victorious. In his hand he holds his shrapnel helmet and a rose, and on his pack is strapped a German helmet. The sculptor is Mr. Tait McKenzie.

Reduced Housing Loan Interest.

The Minister of Health has issued an order, dated June 17, 1922, amending the Ministry of Health (Rates of Interest) Order, 1921. The effect of the amendment is that from the date mentioned the rate of interest set out in the schedule attached to the order and charged on advances to local authorities for housing purposes shall be reduced to six per cent. and five and a-half per cent. respectively.

Old London Bridge Arch.

A public meeting to press for the preservation of the recently-discovered arch of Old London Bridge will be held at the Carpenters' Hall, Throgmorton-avenue, E.C., to-day (Friday), when a lecture on "Old London Bridge, with special reference to the recently discovered arch," will be given by Mr. W. D. Caröe, M.A., F.S.A., F.R.I.B.A. The chair will be taken at 5.30 p.m. by His Grace the Archbishop of Canterbury. The arch itself will be on view and explained by Mr. Herbert A. Cox, F.C.A. (author of "Old London Illustrated") from 3.30 to 5 p.m. The entrance is by St. Magnus Church, Lower Thames-street, E.C. Our readers will be admitted on showing their cards.

The Royal Sanitary Institute.

Under the presidency of Major-General the Right Hon. J. E. B. Seely, C.B., C.M.G., the thirty-third congress of the Royal Sanitary Institute is to be held at Bournemouth, from the 24th to the 29th of this month. As is usual at the conferences of the Royal Sanitary Institute, a large number of subjects connected with the general health and well-being of the community will be discussed by the various sections; many subjects of interest to architects and builders are included, relating not only to hygiene in the home but also to the design of dwellings with a view to securing the greatest amenities. Further particulars may be obtained from the Secretary, Mr. E. White Wallis, at the Institute, 90, Buckingham Palace-road, S.W.

Higher Buildings for London.

The Incorporated Association of Retail Distributors has received an official notification that the L.C.C. has amended its building regulations in the following particulars:—A general height of 80 ft. from the pavement level to the ceiling of the topmost floor is permitted in place of the old limit. A space limit of 500,000 cub. ft. is permitted for the area of any one self-contained compartment, with a maximum floor area of 40,000 sq. ft.

Mr. T. Ernest Jackson, the secretary of the Association, who has conducted negotiations with the L.C.C. on these matters stated, according to the *Evening Standard*, that "the absurdly low height to which store buildings had been permitted in the past had been a great handicap to store development. Old methods had gone, and the fire risk in a building of modern construction was practically nil. The concessions would encourage firms to erect modern buildings. None of the London merchants was in favour of skyscrapers. The merchant was as jealous as any other London interest of the charm and beauty of the old city. It would be possible now, however, to erect stores which would be worthy of London as a shopping centre in which could be employed the brains of the best architects and artists."

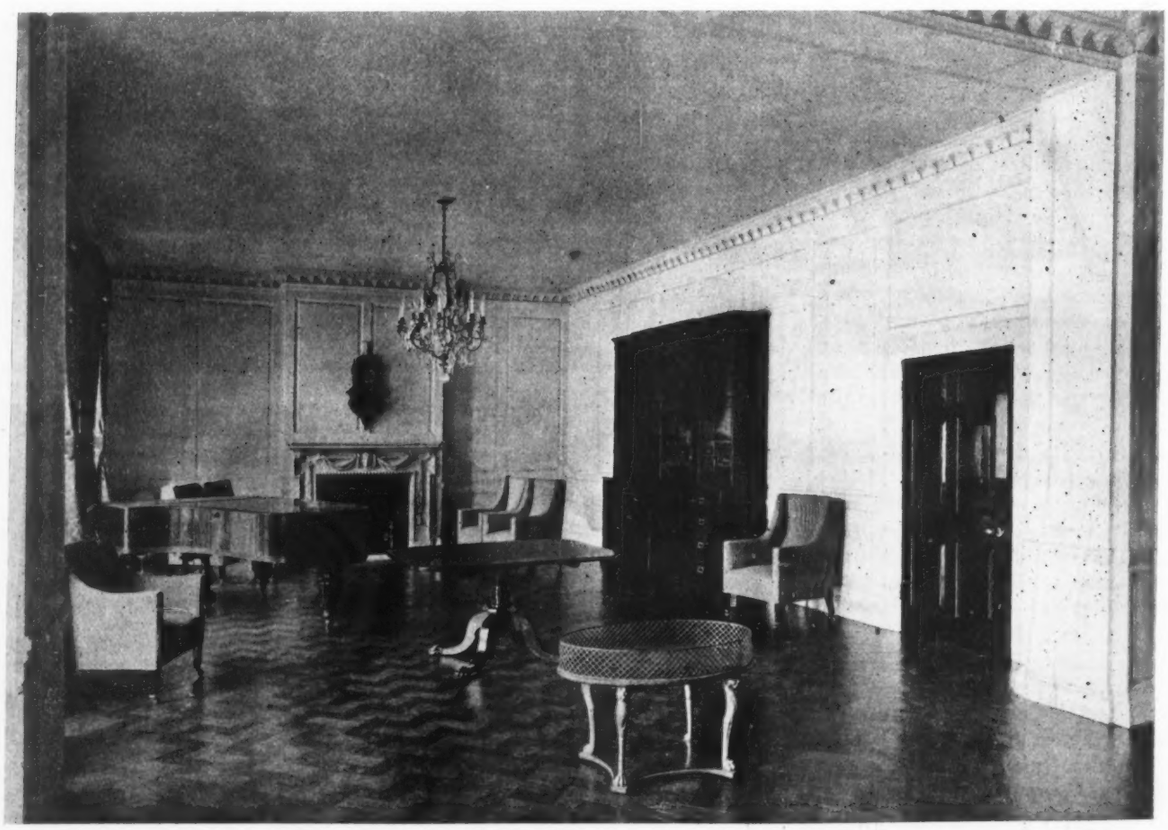
COMPETITION NEWS.

Colombo.

FOR THE MUNICIPAL COUNCIL, COLOMBO.—Designs for a Town Hall and Municipal offices. Sending-in day, November 1, 1922. (See advertisement in this issue.)

Other Competitions.

Other competitions still open include the following (the dates given are, first the sending-in date, and second the issue of *The Builder* in which full particulars were given): R.I.B.A. Poster Competition (July 15, May 5); Southend School (August 31, June 16); Ramsgate Improvement (August 10, June 16); Lytham Public Hall (June 23).



The Cowdray Club and College of Nursing: Drawing Room. MR. EDWIN COOPER, F.R.I.B.A., Architect. (*See p.* 12.)

CORRESPONDENCE.

The R.I.B.A. and Provincial Members.

SIR,—Your "Country Member" correspondent is curiously uninformed about the facts or he could never have written his letter. The "provincial committee" that he wants has been in existence for a long while past; it is composed of representatives of every district in the United Kingdom; it meets periodically at Conduit-street, always four times a year, and as much oftener as it pleases, in addition to holding meetings of sub-committees, and it provides a perfect instrument for expressing the opinions of architects from Inverness to Cornwall. Then, does not "Country Member" know that there are no fewer than nine representatives of provincial societies on the Council itself? Does he not know of all the visits that have been paid to the provincial societies by the Presidents in the past few years; of the Conference at Liverpool last year, and at Cardiff this year—both of them most valuable in fostering the happiest relations between London men and those in the provinces? Certainly during the past two years special efforts have been made to induce members, particularly those in provincial centres, to elect a reasonable number of provincial representatives on the Council, and equally certainly the help of provincial members has been sought in all public action. For instance, of the three who have been working very arduously for the Institute in the matter of the fees to be sanctioned by the Ministry of Health, two are provincial men. What more does "Country Member" think reasonably possible? If he has sound and new constructive proposals to offer, I hope over his own name, they will meet with most sympathetic consideration, but a letter such as he has written can only be injurious to the extent that it is misleading and unfair.

ARTHUR KEEN,
Hon. Secretary, Royal Institute of British Architects.

London, W.1.

SIR,—Your correspondent "A Country Member's" complaint that there is not sufficient "interest in and regard for the Institute" on the part of provincial members is a timely one, but he makes the mistake of attributing the blame to the Council of the Institute. The Institute has done its utmost during the past three to four years to bring the provinces into closer touch with headquarters, and the fact that the Council remains a London one is due entirely to the apathy of the provincial members themselves.

If "Country Member" had kept in touch with the affairs of the Institute he would know that a committee precisely of the character he wants does exist in the Committee of Allied Presidents, which meets at least four times a year. This Committee, realising the need for further representation on the Council, appealed to all the provincial members to support its candidates at the recent elections, and with what result? Less than 50 per cent. of the members troubled to return their papers, and not one of the provincial members was returned, in spite of the fact that the number of provincial members eligible to vote is larger than the total number of votes received.

Again, on the Standing Committees the Council exercised its power to add to these committees and gave seats to the various allied societies.

No, Sir! The remedy is with the provincial members. Let them realise their powers and return their own members and they will find that the Institute is eager to welcome them and work together for the advancement of the whole profession.

PERCY THOMAS,
President of the South Wales Institute of Architects.

Cardiff.

The R.I.B.A. President's Address at the Gold Medal Presentation.

SIR,—This was an occasion otherwise so auspicious that some of us almost regretted the compulsion under which the President felt it necessary to utter his warning of the dangers surrounding architecture; but, though thankful to be admonished of "so foul a conflagration," did not the President a little overweight his apprehensions? "The horrible experiments to which a certain old-world country was submitting itself, the experiment of attempting an architecture 'free from historical style,' would be a nightmare to Europe and a grim menace to all lovers of the beautiful." Such a prospect certainly makes one shudder. We had no idea that English architecture had spiked the guns of tradition and conformity in this way, or that it was now marching through rapine to the dismemberment of architecture! I have haunted the neighbourhoods of the most recent building; walked anxiously up and down Regent-street to confront this spectre, but there was nothing in the least alarmingly original in any of the completed buildings. Where are these Bolsheviks and iconoclasts of architecture lurking—or has the President some secret information at his disposal? If so, it is his duty to inform a threatened world. I hasten, however, to reassure him. The younger men of architecture—who are possibly the dreaming philosophers to whom the President refers—are not so sure but that this garb of "tradition"—in which they also in a sense believe—is not often the cloak of respectability; that the one often masquerades as the other, and that to throw about vague accusations against those who wish to see a better and more vital building, and who do not refuse to "look back" because they also look forward, is to miss the facts of the time and to walk in a vain shadow. It would be so far more helpful if, instead of these vague prognostications, now that the young men are "seeing visions," some, at any rate, of the old men would also "dream dreams."

"TRADITION."

London.

Sculpture and Acoustics.

SIR,—In the correspondence under the above heading the "acoustics" part has received only a modest share of attention. I have followed it in the hope of discovering why the two were mentioned together. Mr. Woodward only adds to the mystery when he says that "there are two buildings in London which are excellent for hearing. One is the Albert Hall, the other the Queen's Hall." The facts are that the two buildings by no means come into the same category. In *The Builder* for June 2 I tried to point out ("Acoustics and the Vatican Choir") that Sabine's law of reverberation, applied to the Albert Hall, gives some interesting results, fully bearing out the practical case against that auditorium. In spite of the considerable absorbing power of the canvas velarium hung in the dome the sound-redundancy is anything over three seconds, and to this must be added a series of world-famed echoes rising from the focusing of beams of sound from the panelled cove and other smooth curved surfaces. Does Mr. Woodward dispute Sabine's Harvard experiments, now published in book form by the Harvard University Press, or deny the existence of the echoes and redundancy? The Queen's Hall, on the other hand, is one of the few excellent concert rooms for orchestral and choral music that exist in Europe, and for special practical reasons which also bear out the theoretical results from America and Germany. But the fact that it is a good concert room does not mean that it is good for the speaking voice.

There is a particular and interesting relationship between sculpture, in the sense of relief and acoustics, which Mr. Woodward has not touched upon. Heavily moulded decoration, carving and projections on wall and ceiling surfaces serve to diffuse sound rays and prevent long reflected paths of sound. As in the case of light, a surface, in order to be diffusing, should have a depth of relief equal to one-tenth of the wave length. The wave length of the human voice being on an average 3 ft., the depth of relief, to be of use, should be at least three or four inches. In this respect the theatre tradition of moulding all surfaces has undoubtedly a value, but in modern acoustic design the tendency is to mould or render absorbing only those surfaces that are harmful reflectors, and keep useful reflectors smooth. Mr. Woodward says, "architects and the public are so interested . . . in sculpture . . . and acoustics . . ." I wish I could agree with him in the case of acoustics. In the course of this present correspondence the publication of Professor Sabine's results, with its interesting illustrations of specially designed halls and concert rooms, has not even been mentioned.

H. BAGENAL.

The South Porch, St. Mary's, Oxford.

SIR,—A few days since on passing St. Mary's, Oxford, I noticed that they are restoring Inigo Jones' porch, which, I believe, is his most notorious freak in church work. The light blocks of stone inserted in the corkscrew pillars, and other parts of the structure, were causing considerable amusement to a party of American tourists who could not understand why the authorities in a city like Oxford have tolerated such a disfigurement of a fine Gothic church like St. Mary's. The same remark applies to Wren's classic cloisters at Lincoln Cathedral.

EDWARE VALE.

Weston-super-Mare.

"Daylight Saving."

SIR,—The abridged version of my communication, as printed in your issue for June 30, obscured my meaning in respect of the working day. So permit me to observe that we are not dealing with a matter of opinion, but recognition of the physiological fact that excess of daylight is enervating, therefore inimical to health and industry; consequently, tampering with the clock is the reverse of economical, whatever may be the saving (?) in illuminants. Moreover, although legislators may choose to ignore the ruling of Nature, she remains the autocrat who always has the last word.

CORDELIA B. E. LEVERTON.

London.

A Plea for a Central Bureau.

SIR,—I should like to support the suggestion for a Central Bureau to deal with unemployment in the architectural and surveying professions.

We are all hoping for a revival and for a genuine start with reconstruction. Success in this direction will depend upon getting the right men in the right places.

A Central Bureau should be a valuable assistance in this matter, and if the various organisations at present attempting to deal with unemployment are animated by the right spirit there should be no difficulty in arriving at a suitable arrangement.

"TEE SQUARE."

N.W.1.

[Other letters are unavoidably held over.

Memorial Gateway at Clifton College.

Earl Haig unveiled the memorial gateway at Clifton College, on Friday last week. The gateway which now forms the principal entrance to the College, consists of a central gateway for vehicles flanked by smaller gates for pedestrians. The two side walls within the gateway contain the names of 578 Old Cliftonians who lost their lives in the war, surmounted by a dedicatory inscription and verse, written by Sir Henry Newbolt, and the arms of the College. The roof is groined and vaulted in stone, and the windows above the side openings are glazed with leaded glazing. The turret staircase gives access to the roof and flagstaff. The architects were Messrs. Adams Holden & Pearson, of London.

MR. PAUL WATERHOUSE (President) occupied the chair at a meeting of the Royal Institute of British Architects held at No. 9, Conduit-street, W.1, on Monday last.

OBITUARY.

The Hon. Secretary (Mr. Keen) announced the death of Mr. G. E. T. Laurence, elected Associate, 1887; Mr. Henry Higgins, elected Licentiate, 1911; and moved that a message of sympathy and condolence be conveyed to the relatives.

ROMAN ARCHÆOLOGY.

DR. THOMAS ASHBY, D.Litt. (Director of the British School at Rome), then read a paper entitled "Recent Excavations at Rome." Since Professor Lanciani delivered his address on "Architectural Results of the Latest Excavations in the Forum," he said, no one had spoken to the Institute on the subject of recent discoveries in Rome, and therefore he thought it might be well to begin by telling the story of the excavations at the Forum and the Palatine, both of which were under the direction of Commendatore Boni, from the point where he left it up to the present day.

One of the most important results had been the confirmation of certain statements of ancient authorities in regard to the early history of Rome, which had previously been doubted by hypercritical historians. Thus they might, he thought, take the Palatine as the original nucleus of Rome, even though the wall of Romulus probably never existed. The Palatine was sufficiently defended by its lofty cliffs and by the two marshy valleys which nearly surrounded it. Remains of a cemetery which began to be used about 750 B.C. (about the date of the traditional foundation of Rome) had been found in the Forum near the Temple of Antoninus and Faustina, though that cemetery probably belonged to a somewhat enlarged community. It ceased to exist about 550 B.C., when the city of the Seven Hills came into being, and as it became necessary to make use of the two marshy valleys above mentioned, which now were drained and converted respectively into the Forum and the Circus Maximus—the civic centre and the place of recreation. Tradition ascribed to Tarquinius Priscus the construction of the Cloaca Maxima at that very date, and scanty traces of it had actually been found; it appeared to have been an open channel, but several of its branches, constructed of the same material, a grey volcanic tufa, had been preserved, and might claim to be, by two or three centuries, the earliest Roman arches in existence.

To the same period—again that to which tradition ascribed it—belonged the earliest city wall of Rome, built of the same material, the blocks used being about a foot high, and also the Temple of Jupiter Capitolinus, further remains of which had recently been brought to light, belonging entirely to the podium. Of the superstructure nothing was left, and even of that of Imperial days hardly a trace had been found, but quite a new light had been thrown on the character of the terra-cotta statues which adorned the original temple, the work, according to Pliny, of Vulca, an artist of Veli, by the discovery at Veli itself of portions of a very fine group of painted terra-cotta statues, including a splendid Apollo. The same material might be found in several early buildings in the Forum, notably in the podia of the temples of Saturn and of Castor and Pollux, both of them attributed to the beginning of the fifth century B.C.; and he thought it was not too much to say that they were on fairly safe ground in attributing to any buildings the use of capellaccio, as that particular kind of tufa is called, to, roughly, 550 to 450 B.C.

Of the succeeding two centuries they knew very little. In the successive reconstructions of the shrines and sanctuaries of the Republican Forum the remains of the original structures were not altogether destroyed, and thus in the pavement of the Lacus Curtius and in the shrine of Venus Cloacina they might trace a succession of different building materials, each belonging to a different reconstruction, and testifying to a gradual rise in level. . . .

Various changes in orientation, as well as in level, seemed to indicate that the Curia, or Senate House, originally placed by the kings on the north side of the Comitium, must have changed its orientation more than once; but until the excavation could be extended further to the north-east it would be impossible to hope for a solution of the problems which presented themselves in that connection. A break with tradition had already been made in 145 B.C., when for the first time a tribune turned his back on the Comitium to address the people in the Forum; but it was Julius Cæsar who transferred the Rostra to the north-west end of the open area of the Forum, which lay between the two basilicas which had sprung up behind the two rows of tabernæ. That change made it possible to give the Forum a proper architectural setting. On each side of the open space there was to be a magnificent basilica, the Curia was to be reconstructed, and the whole of the open area of the Forum paved; but Cæsar's death cut those projects short, and it was not until Augustus returned to Rome as a victor that he was able to bring them to completion. There was one addition to the scheme. The temple of Cæsar, at the other end of the Forum proper, was raised to his memory by Augustus. The very spot on which the body of the Dictator was burnt is included in the façade—a semicircular niche enclosing the actual slabs on which the impromptu pyre was raised—a case unique in architecture; and in this niche, perhaps the most impressive spot in the Forum, was the base of the monument which had been erected immediately afterwards. Of the temple itself but little was preserved; the blocks of marble and stone of which it was constructed were removed in the Middle Ages, and almost nothing was left but the concrete core. It was erected on the site of the street which bounded the Forum, as Cæsar had planned it, on the south-east. Parallel to that street there was a line of small rectangular pits, stone lined and covered with slabs of stone, and similar pits had been found on two of the other three sides. Three lines of similar pits ran along the boundary between the Republican Comitium and the Forum, closely associated with the earlier Rostra. Those pits must have had some ritual significance which was unknown to them.

In the course of the reconstruction by Augustus the open area was repaved at a level slightly higher than that of Cæsar. An aerial photograph had revealed the existence of an inscription in letters a foot high, once filled up with bronze, showing that the pavement had been laid by one *L(ucius) Naevius L(uci) F(ilius) Surdinus Pr(aetor)*. A man of that name was *triumvir monetalis* about 15 B.C., with whom he might be identified. That discovery at once led to the identification of a number of monuments of which ancient authors spoke.

Of the two great basilicas by which the open area of the Forum was flanked, the Basilica Julia on the south was planned by Cæsar and completed by Augustus. The building now to be seen, however, was a reconstruction by Augustus upon a larger site. Only the foundations of the pillars were now preserved, except at the north-west end. The central hall was lighted by a clerestory, like the nave of a cathedral. At the back was a row of small rooms (*tabernæ*) used as offices or shops.

The lecturer then referred in detail to the Basilica Aemilia; the temple of Castor and Pollux; and the *Lacus Juturnae*. Proceeding, he said: Close to the well of Juturna stood the round temple of Vesta. Only its foundations remained, but enough fragments had been found to give an idea of its appearance. They dated from the reconstruction by Julia Domna, the wife of Septimius Severus, as, indeed, did the House of the Vestals—generally known as the Atrium Vestæ, from the large court surrounded by a portico which formed its central feature. The oldest portions now above ground dated from the time of Nero, but recent excavations had brought to light traces of the Atrium Vestæ of the end of the republic, with mosaic pavements, etc., below the level of the later building. The Romans did not completely clear the site of a new building, but left the floors and walls of the building they destroyed or superseded lying often only a few inches below the new pavements; and as that process was often repeated several times they were able to gain far more information by the excavation of the site of a Roman city than would be possible supposing that modern London were to fall into ruins and be excavated two thousand years afterwards. The orientation of the earlier foundations corresponded with that of the Temple of Vesta and of the Regia, the entrances of both of which faced due east.

Nero's reconstruction of the Atrium Vestæ was only a part of a grandiose building scheme which transformed the whole of the topography of that part of Rome. Before the time of Nero the Sacra Via ascended the ridge of the Velia in a slight curve, and the very paving stones on which Horace might have been strolling when he met his importunate friend had been brought to light, but the erection of the Golden House after the fire of 64 A.D. involved the provision of an adequate approach to a group of buildings which covered an area greater than that of St. Peter's and the Vatican, including the garden. From the Temple of Vesta a huge portico, of which only the foundations remained, led up to the vestibule on the summit of the Velia. Those foundations, which were identified, correctly in his judgment, by an American archæologist, Miss Van Deman, cut through the remains of a large and important republican house, or it might be a group of houses, of which no report had yet been published. The foundations of other buildings on the same orientation had been found under the Basilica of Constantine, and the Sacra Via was obviously laid by Nero to run in a straight line up to the entrance of the Golden House between two porticoes. The site of the Colosseum in the valley beyond was occupied by an ornamental lake, and the principal palace lay to the east of it.

The unpopularity of Nero's appropriation of such an immense extent of ground, almost in the centre of the ancient city, was clear from the eagerness displayed by his successors in restoring it to public uses. . . .

The successor of Augustus Tiberius erected the first of the great imperial palaces on the north-west summit of the hill known as the Cermalus. Caligula extended it towards the Forum, and they were told that he considered the Temple of Castor as the vestibule of the palace. That that was no mere rhetorical exaggeration had been shown by the recent discovery under the floor of S. Maria Antiqua of an open water-tank, one lined with marble, which must have once stood in the middle of

a great peristyle or courtyard, and was orientated with the palace of Tiberius. Of his bridge from the Palatine to the Capitol, which was destroyed by his successor, no remains, naturally, existed. Claudius, on the other hand, constructed a splendid and magnificent residence on the south-east summit of the hill, the Palatium, some remains of which were known as many as 200 years ago under the name of the "Baths of Livia," while other portions, discovered in the early eighteenth century, had only just been brought to light. That palace was in two stories, and was decorated with paintings and pavements of coloured marbles of great beauty.

Nero had already planned a huge palace which should join the Palatine with the Esquiline (*domus transitoria*), when the fire of 64 A.D. which destroyed it enabled him to realise his projects in still larger measure. But on the Palatine he had time to do but little, and nothing but a few foundations, which were driven through the burnt remains of the palace of Claudius, could be attributed to him. . . .

No discoveries of first-rate importance had been made of recent years within the centre of the modern city, but it was worth noting that the construction of two large banks in the Piazza Colonna led to the discovery of a large group of blocks of houses of the middle of the second century A.D., and not of the Porticus Vipsania, which apparently did not extend so far to the south as had hitherto been believed. The exploration, under the direction of Professor Lanciani, of the substructions of the Baths of Caracalla, had thrown great light upon the details of the construction of the baths, and had brought to light the largest sanctuary of the Persian Sun God Mithras that was known to us—which was introduced there at a later date. Considerable work had also been done in the outlying portions of the baths, which would now form an excellent subject of study for an architectural student.

Though there had been a good deal of building activity in the central portion of Rome during the past few years, the other few outstanding discoveries with which he would deal had all been made in the outskirts, and all either during or since the war. First of all came the famous basilica near the Porta Maggiore, which was discovered in 1917 owing to a landslip under the Naples main line, caused by the presence there, hitherto unsuspected, of the light shaft of its vestibule. The exact date to which it belonged, and the purpose which it served, were still the subject of much controversy. He was inclined to accept the theory that it belonged to the Statilian family, a member of which, T. Statilius Taurus, was accused of magical practices by Agrippina, the wife of Claudius, and took his own life to escape a worse fate. He was inclined to think, too, that the desire for secrecy explained the method of construction. It would seem that the concrete of which the walls and piers were constructed was poured into pits sunk in the virgin soil, which was also used to support the vaults while hardening. When the concrete had set, the earth was removed and the interior of the building cleared from beneath, so as not to attract attention. The interior was, indeed, approached by a long corridor leading into a vestibule, a shaft in which gave light indirectly to the basilica itself; that had a nave and two aisles, separated from one another by pillars supporting arches. The walls and vaulting were decorated in white stucco. The figures and scenes were not in themselves difficult of interpretation, though the principle of their selection was not at first sight obvious. Mrs. Strong, however, who interpreted the difficult scene in the apse as one of purification by the ordeal of water, pointed out that all the other scenes could be referred to the wanderings of the soul and its progress towards its final goal.

Not very far off, in the Viale Manzoni, a hypogeum of quite a different character and date had still more recently been discovered. Above it was a lofty brick tomb of a type familiar enough in the Via Appia and the Via Latina, in the base of which (the only part preserved) was a sepulchral chamber with arcosolia and burials in the floor. The paintings were damaged, but Adam and Eve might clearly be recognised. Just outside was a staircase leading to a landing, on the left of which was the entrance to a subterranean chamber with vaulted roof and a large light-shaft in the centre, and an arcosolium on the right and left. The paintings with which that chamber was decorated had recently excited considerable interest owing to the fact that an incautious correspondent announced the discovery there of contemporary portraits of Peter and Paul. It was not impossible that they might be recognised in two of the twelve male figures which decorated the lower part of this wall, but there was no doubt that the paintings could not be earlier than the end of the second or the beginning of the third century A.D., and not B.C. The paintings on the upper part of the wall had not yet been interpreted with any certainty. It was generally agreed that they were Christian, but some had desired to see agnostic influence in them. He was rather inclined to suppose that there was a certain amount of intentional concealment of their Christian character; thus, the scene which very likely represented the Sermon on the Mount might, to a pagan, represent any shepherd with his flock below him, and the interesting scene which showed a man on horseback met outside the city by a cortege of persons who had come to do him honour, might be intended to recall to the Christian beholder Christ's entry into Jerusalem, a small donkey feeding in the background giving the key to the true meaning of the scene. The Good Shepherd, several times repeated in the vault, might just as well be Orpheus, while the group of twelve draped male figures which was found in the other chamber was flanked on each side by a group of six men and six women in pairs, who certainly could not represent the twelve apostles. The building lay close to the Via Prænestina before its divergence from the Via Labicana, and a number of interesting tombs had recently been found on some of the other high roads which radiated from Rome. An especially interesting group was that which had come to light on the Via Ostiensis, near the church of St. Paul, outside the walls. The tombs fell into four different periods, and the best of them were some columbaria (which took their name from the small niches, like those of a dovecot, in which the cinerary urns were placed) belonging to the second period, from the beginning of the empire to the end of the second century after Christ. Some other columbaria had been found under the church of S. Sebastiano on the Via Appia, which were especially interesting from the freedom of their style and the beauty of their stucco decorations—in one was a peacock with the tail shown in colour, while in the other the ceiling of the principal chamber was covered with the tendrils and bunches of grapes of a vine springing from the angles.

A little beyond the church a tomb had been found which marked the transition between cremation and inhumation (beginning of the third century A.D.), having been constructed from the first, with eleven small niches for urns and three recesses for bodies.

Commendatore Lanciani, hon. corresponding member, in proposing a vote of thanks to Dr. Ashby, spoke of the great discovery which had been made in Rome and which would shake the foundations of their belief in Roman tradition. On the top of Mons Vaticanus Signor Dall 'Osso had discovered the remains of a settlement much earlier than the tenth or eleventh century B.C. had been unearthed, and there had been discovered Etruscan pottery and the remains of huts made probably of wood with thatched roofs. There had also been found fragments belonging to the Paleolithic Age. That would be before the birth of Rome, thus being much earlier than their ancient traditions. Those discoveries had not yet been officially described and, therefore, they must reserve their judgment until they had the material at hand.

Prof. H. E. Butler seconded the motion.

Prof. Beresford Pite, in supporting, said how interesting and alive the subject was to-day. He thought it was singular that Rome, which had a doctrine of town planning, a regular system of rectangular streets and consistent outlines, which imposed that doctrine upon England in the north and upon the boundaries of Syria in the east, and built cities all along the Mediterranean littoral in Africa and Spain of a stereotyped plan, based upon a highly scientific doctrine of town planning, was entirely unable to apply its doctrines to its own soil. Rome utterly failed as an example of theoretical town planning, the theory having failed in the same way as it did in London.

Mr. Edwin P. Warren also supported, remarking that the more one was privileged to see of the freshly discovered antiquities of Rome, the more one was struck with the fact that their civilisation, as far as material needs were concerned, went quite as far, if not a little farther, than our own. As to the lighting of the Roman streets, he had often supposed that they were lit by means of lanterns suspended by string.

Messrs. Arthur T. Bolton and Theodore Fyfe also supported the motion.

The vote was cordially carried, and Dr. Ashby, in acknowledging, said, with regard to Roman town planning, there was a complete absence of the regular planning which was found in other cities. Rome started, very early in her career, a proper road system, a branch of military science which the Romans understood thoroughly. The roads were fixed points issuing from certain gates in fixed lines, and could not be changed. Regarding private houses, there were none preserved in Rome. They were only preserved in plan. As to traffic, it was almost entirely foot traffic, only privileged people being allowed to go about in vehicles.

THE LATE JOHN WARD, M.A., F.S.A.

An Appreciation.

Archæologists and all interested in museums and antiquarian research, especially in South Wales and Monmouthshire, will learn with sincere regret of the death recently, at Derby, of Mr. John Ward, in his sixty-sixth year. Until he retired in 1919, owing to continuous ill-health, deceased was consulting archæologist to the National Museum of Wales, at Cardiff.

Appointed in 1893 to the Municipal Museum as curator, by his ardent enthusiasm as an official, with wide general knowledge, he was largely instrumental in promoting and popularising the institution, which, in 1912, was merged in the National Museum of Wales.

As a member for several years of the Cambrian Archæological Association he contributed many valuable papers to the "Archæologia Cambrensis"; to the *Transactions* of the Cardiff Naturalists' Society; as a Fellow for many years, to the Society of Antiquaries; and to various other publications of antiquarian research. In response to the request of the editor of "The Antiquary's Books," he published two volumes—"Romano-British Buildings and Earthworks," and "The Roman Era in Britain."

In addition to his valuable work on the Roman Fort at Gelligaer, near Cardiff, his explorations and report of the Roman remains, &c., at Caerwent, Monmouthshire, he also did a good deal of important work in connection with the Roman work at Cardiff Castle, for the Marquis of Bute, where he was called in as consulting archæologist. Many important discoveries were made at the Castle at this period (1911 to 1915).

For his keen and increasing interest in all kindred Welsh subjects, the Welsh University, in 1917, conferred on him the honorary degree of M.A.

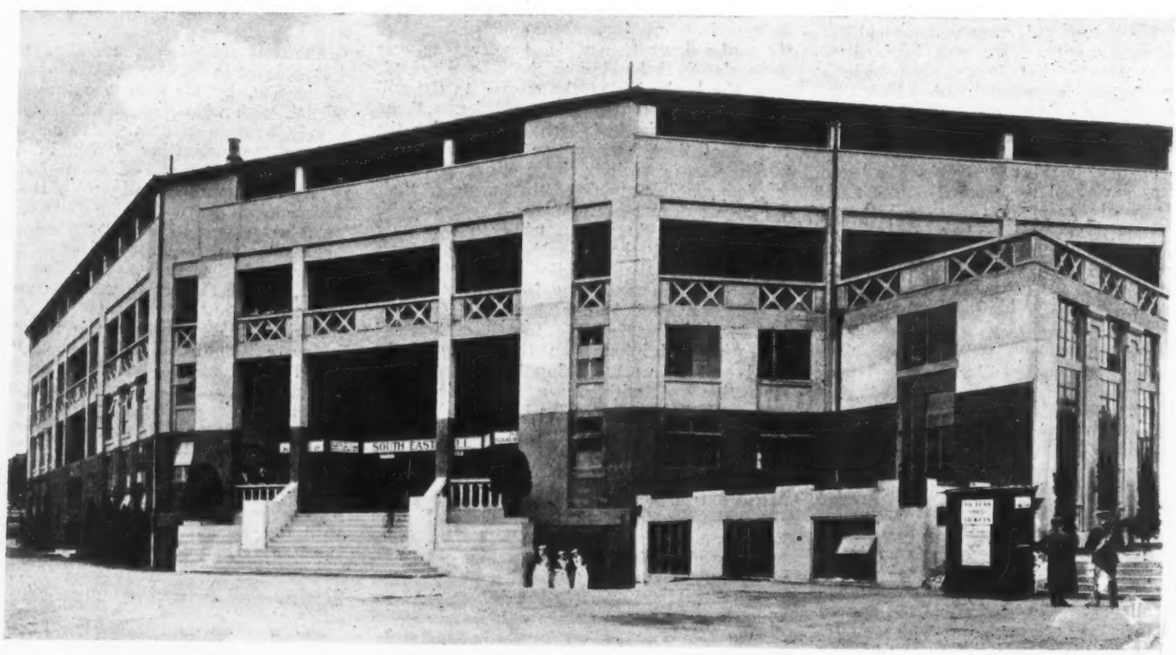
The All-England Lawn Tennis Stand: A Corner of the Interior.
CAPTAIN STANLEY PEACH, F.R.I.B.A., Architect.

THE NEW ALL-ENGLAND TENNIS STAND.

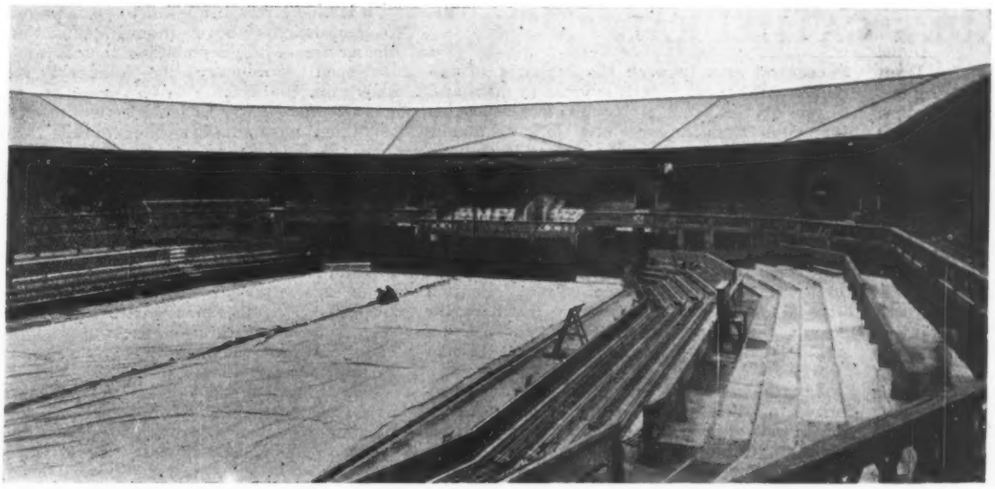
To those who are unfamiliar with concrete except as a material for floors and foundations, or for walls which are afterwards covered with stone, plaster, roughcast, or other facing, the stand which has been built around the centre court of the All-England Lawn Tennis Ground at Wimbledon will undoubtedly come as a surprise. Except for the doors, window frames, seats and roof, this large structure, with its accommodation for 14,000 spectators, its covered area of 46,500 square feet, and its three miles of seats, is built entirely of reinforced concrete, and no attempt whatever has been made to disguise that fact. As economy in cost and time—especially the latter—were the prime factors to be considered in the work, the architect, Captain C. Stanley Peach, F.R.I.B.A., and the owners of the ground (Messrs. The All-England Tennis Ground, Ltd.) early decided that reinforced concrete was the most suitable material for the construction of the stand, and the structure was limited to the necessities of sound building without the addition of any extraneous ornament. The texture of the surface, which has not been touched since the removal of the shuttering, is excellent; in places it has been covered with a light green distemper in order to help the players by providing a darker background to show up the balls more clearly, and it would probably considerably add to the appearance if the whole of the structure were treated in the same way. The balustrading and railing, all of concrete, have an appearance of lightness which is not generally associated with the material, and relieve any heavy effect which might be given by the remainder of the stand.

Although no attempt has been made at decoration or covering the concrete, the interiors of the various committee rooms, halls, tea-rooms, and especially the Royal rooms, are very pleasing. The keynote is simplicity and effect obtained by proportion. The tea-rooms, situated under the stepping of the stand and overlooking a lawn and some of the open courts, are well adapted for their purpose; indeed, the restfulness which is here obtained by the absence of decoration might well be studied by those responsible for the design of the over-elaborate and fussy tea-rooms often to be found elsewhere. In the Royal rooms the walls are of pink plaster blocks, the wall surface being broken only by the joints between the blocks, which are emphasised by very distinct pointing. Pink plaster blocks are also employed in the main entrance hall and staircase, whilst for the other partition walls breeze-concrete blocks are employed.

A point of interest in connection with the stand is that it has been built entirely outside the London County Council Regulations for Reinforced Concrete, and although it has been thoroughly tested and found to have an ample margin of strength to cover any load which might be placed upon it, it could not have been built in any area to which the L.C.C. Regulations apply. In this connection it may be pointed out that had the Bill for the extension of the area of jurisdiction of the L.C.C. been passed before the stand was built it would either have had to be constructed of a different material at Wimble-



The All-England Lawn Tennis Stand: Main Entrance.
CAPTAIN STANLEY PEACH, F.R.I.B.A., Architect.



The All-England Lawn Tennis Stand: A Corner of the Interior.
CAPTAIN STANLEY PEACH, F.R.I.B.A., Architect.

don (which is included in the Bill), or, if the owners had insisted on a reinforced concrete stand. Londoners would have had to travel almost as far as Guildford to see the tennis championships played.

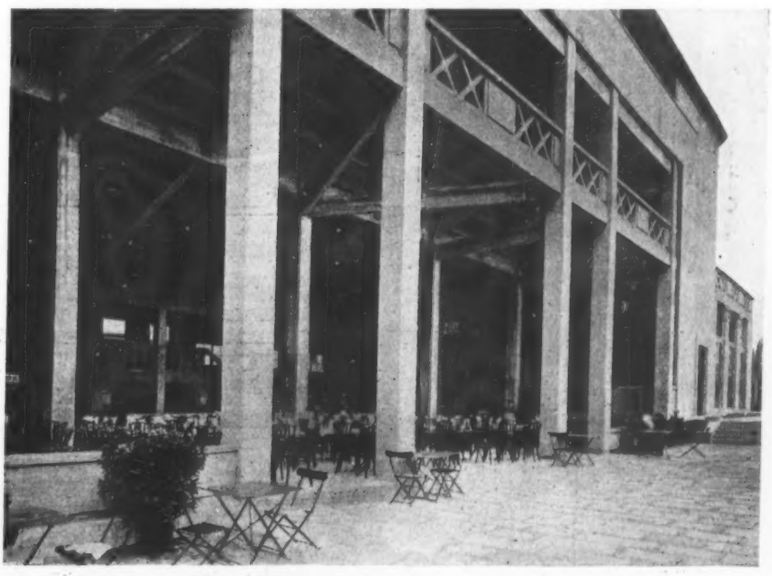
The constructional work has been very rapidly carried out. Work was actually commenced on the site last September, and it speaks well for the rapidity with which reinforced concrete structures can be erected, even on an exposed site during the winter months, that last week the stand was practically completed and opened by the King. The main stand, which gives covered seating to approximately 10,000 spectators, has four rings of columns, those in the third ring (counting from the outside) being at 10 ft. and 20 ft. centres. These columns are connected by main beams which carry the raker beams spaced at 10 ft. centres. The supports are widely spaced, and occupy only ½ per cent. of the total area covered, the entire area of the covered portion of the stand being 46,500 sq. ft., and that occupied by supports 248 sq. ft. The risers to the steppings are formed by pre-cast beams, and the method of erection was as follows: the centering to the main beams and raker beams was erected and the steel reinforcement fixed into position; the centering to the tread of the stepping was then fixed, and the pre-cast risers hoisted and fixed into position. After the risers were fixed the actual concreting of the beams and treads was commenced.

The slope of the site, which falls 30 ft. from one side to the other, has largely influenced the design of the building, and the space which has accrued below the steppings owing to the fall of the ground has been utilised to provide two intermediate floors, which extend from the centre of the south bay to the east. The space furnished by these floors is utilised to provide rooms for the administration, dressing rooms, upper refreshment room, etc. A lower ground floor gives the necessary catering accommodation. Exits from the steppings connect with galleries at their respective levels. The upper gallery is of rather unusual construction, being supported on the inside by hangers which transmit the load to the raking beams above. Between the main stand and the centre court are open steppings, providing accommodation for approximately 4,000 people. The construction of this part of the work is not exactly similar to that of the main stand. Here reinforced concrete frames at 20 ft. centres form the main supports, the risers to the steppings forming secondary beams. The four rows of steppings next the centre court are constructed on the solid ground.

The stand is so planned that the spectators may reach their seats and leave after the play without undue delay. There are four main entrances, with large halls immediately inside leading to the staircases, and two other entrances. The seats throughout are of the garden type, with comfortable backs; the farthest seat is 49 yards from the centre of the court, and in no seat is the view interrupted, the piers supporting the roof, owing to their small size, being negligible. Ventilation is by open spaces under the roof and behind the back tier of seats. Altogether there are 47 staircases in the stand. The arrangements for the Press, players, and staff have been well looked after, and include baths, lounges, dressing rooms, etc., conveniently placed. The roof is so constructed that while the court is open to the sky the shade does not fall on it until after 7 p.m., and then only on a small corner.

The whole of the reinforced concrete is on the "Kahn" system, from the designs prepared by the Trussed Concrete Steel Co., Ltd., of 22, Cranley-gardens, S.W., and carried out under the supervision of their engineer, Mr. E. Roland Hole; the general contractors were Messrs. Stuarts Granolithic Co., Ltd.; the general furnishings and the whole of the internal fitting of the stand was carried out by Messrs. Mullen & Lumsden, Ltd.; other sub-contractors were as follows:—Steelwork and roof, Archibald D. Dawnay & Sons, Ltd.; sanitation, heating, and drainage, Davis, Bennett & Co.; seating, barriers and ropes, and brass fittings, Piggott Bros. & Co., Ltd.; steel sashes and casements, F. A. Norris & Co.; jointless flooring, Nuroads, Ltd.; fencing, Fernden Fencing Co., Ltd.; temporary fencing, Kent County Fencing Co.; wall tiling, Martin Van Straaten & Co.; electric wiring and fittings, Rawlings Bros., Ltd.; painting of roof, gutters, etc., Aerograph Co., Ltd.; collapsible gates, Bostwick Gate & Shutter Co., Ltd.; steel lockers, Sankey-Sheldon, Ltd.; hard courts, En Tout Cas, Ltd.; general equipment of ground, Slazengers, Ltd.; centre court cover, John Edgington & Co., Ltd.; pay-boxes and barriers, E. Stevens; turnstiles, W. Slank & Co.; guards to windows and grilles, Frank Burkitt; sand, ballast, etc., John Bennett; bronze fittings, Birmingham Guild, Ltd.; consulting electrical engineers, Siemens Bros. & Co., Ltd.

Plans and sections of the stand are given on pp. 17 and 18.



The All-England Lawn Tennis Stand: The Tea Room.
CAPTAIN STANLEY PEACH, F.R.I.B.A., Architect.

ST. PAUL'S CATHEDRAL.

THE present appeal for funds by the Dean and Chapter for the purpose of carrying out further repairs to the structure reminds us that St. Paul's Cathedral is materially, as well as artistically, ranked among the great buildings of the world, and it is but natural that comparatively large sums of money should be required for its preservation and repair after more than three centuries of use.

The span of the dome, though less than that of St. Peter's at Rome, Santa Sophia at Constantinople, or the Duomo of Florence, is still worthy to be classed with these colossal experiments of the builder's art, and the weight of Wren's central feature is enough to impose a great stress upon the eight piers forming its supports between floor level and the Whispering Gallery.

Sir Christopher Wren did not stint the height needed for the correct exterior effect of his masterpiece through any mean fears as to stability, and the structure itself bears evidence that he was fully aware of the nature of the mighty forces of destruction that he was piling up in the centre of his building and his devices for their restraint are altogether admirable.

What Bramante and Michelangelo had done by the accumulation of brute bulk of material, Wren accomplished by scientific adjustment of slighter supports, and whereas the main piers of St. Peter's are four immense blocks of masonry obscuring the vista down the aisles, Wren threaded the aisles of St. Paul's right through the central area between the supports of the dome. Where St. Peter's is great in mass and dimension, St. Paul's, though smaller, gains immensely from the sense of scale implanted in it by the contrast of small aisle and large nave mingled in the central composition. More than that, the reasoned economy of Wren's design imparts to it a grace and dignity that is impossible to obtain by mass alone.

Wren wrought into the grandiose style borrowed from Italy a Northern thrift, and designed his mighty dome with a scientific regard for lightness of structure which recalls the daring achievements of Gothic construction rather than the ponderous inertia of Roman work.

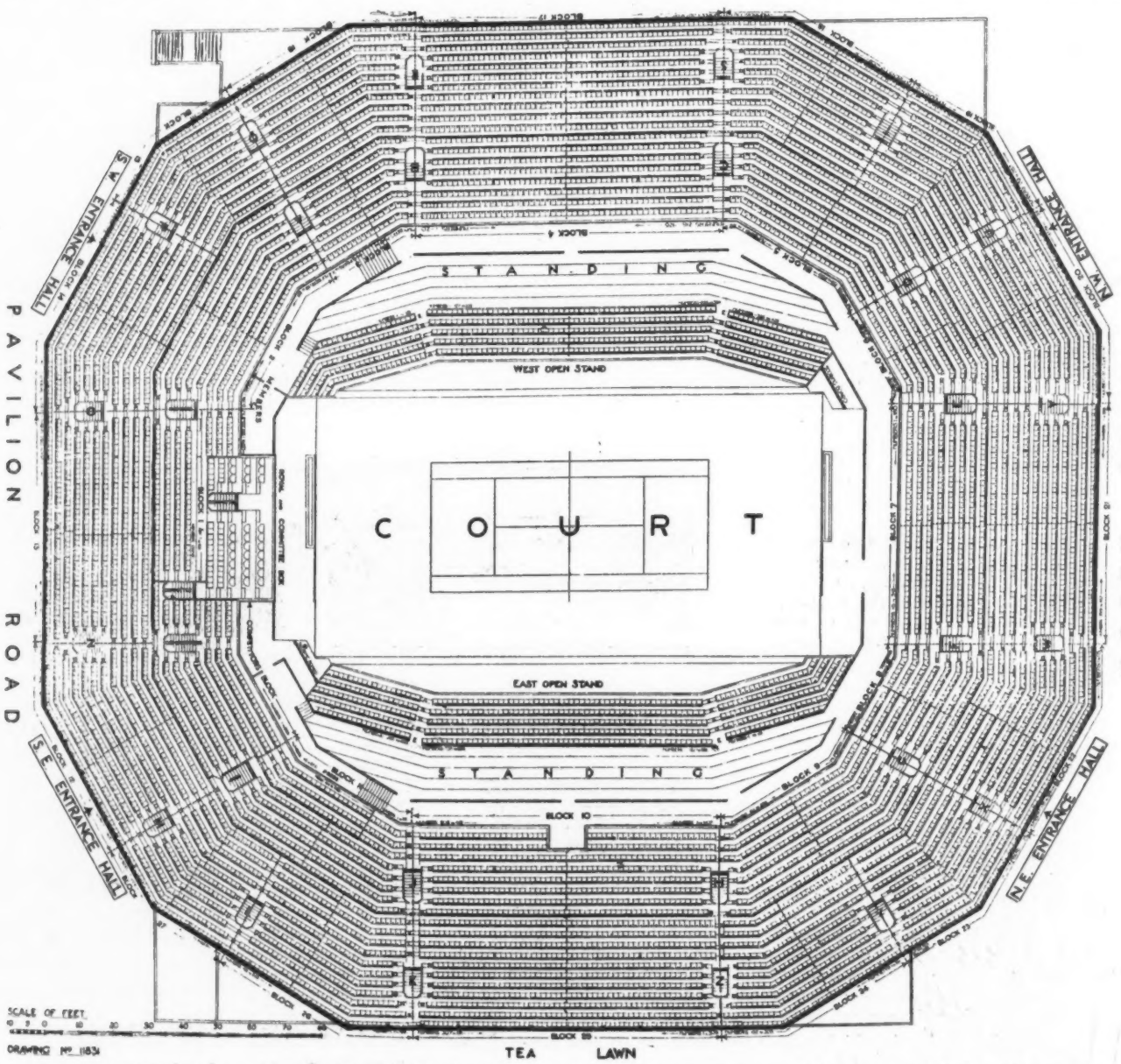
Like the builders of Gothic times, Wren was prepared to estimate the carrying capacity of each cubic foot of material at a high figure, and his debt to Gothic tradition shows itself again in the employment of an outer shell of close jointed ashlar enclosing an inner core of rubble and mortar.

The long life of the Cathedral is sufficient to demonstrate the soundness of Wren's judgment in the selection of his constructional expedients, methods and materials, but in a structure of immense size the smallest defect may give rise to grave anxiety. Such a building has to face destructive forces from which a work of lesser size escapes.

Difficulties due to expansion in the faces exposed to the greatest warmth, wind stresses with terrific leverage applied to surfaces raised to great heights above ground, inequalities in the nature of the foundation subsoil, are all developed enormously by increased scale. Above all, the weights to be carried are augmented prodigiously as buildings approach the maximum possible dimensions of height and span. It is not necessary to analyse here all the contributory causes of the defects in St. Paul's Cathedral, but vibration caused by high-speed heavy motor traffic, drainage of subsoil water, and the excavations for sewers and tubes have been suspected of increasing the damage. But the fact is that every roof, beam, arch or dome that spans an open space is fighting a losing battle against gravitation, and when the span is great human ingenuity has to be called in to aid the forces of the building's resistance by judicious repair.

The difficulties and dangers of repair as well as its cost are enhanced by the scale of the building, for where a few props of timber might be made to act as temporary shores holding up a wall 40 ft. high, carefully designed and very substantial towers of steelwork are required to cradle the great arches of the central area in St. Paul's Cathedral.

The fractures in the building have been kept under careful observation for several years and its curious movements have been recorded, so that the works of repair will be founded on a rational estimate of the present condition of the structure. Most Englishmen will heartily sympathise with the appeal of the Dean and Chapter, and it is to be hoped that all who can will contribute to the restoration fund.



The All-England Lawn Tennis Stand: Seating Plan. CAPTAIN STANLEY PEACH, F.R.I.B.A., Architect. (*See p.* 8.)

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

Unification and Registration.

A RESOLUTION of the Council of the Institute on unification and registration is given on page 2.

Notes from the Minutes.

The following notes are from the minutes of the Council meeting held on June 26:—

Robert Gordon's Technical College, Aberdeen.—The Post-Diploma (six-year) Course of the School of Architecture, Robert Gordon's Technical College, Aberdeen, has been recognised as exempting from the Final Examination under the usual conditions.

School of Architecture, Cardiff.—The three-years' course of the School of Architecture, Cardiff, has been recognised as exempting from the Intermediate Examination for a further period of two years.

Registration of Electrical Contractors.—The Council has accepted the draft proposals for obtaining the sanction of the Board of Trade for the scheme of voluntary registration of electrical contractors in Great Britain, and has agreed to appoint two representatives to the Board of the Registration Authority.

Liverpool Corporation By-Laws.—On the recommendation of the Science Standing Committee, the Council has sent to the Liverpool Architectural Society a criticism of the draft By-Laws on Ferro-Concrete and Steel-Frame Buildings proposed by the Liverpool Corporation.

Tendering Without Bills of Quantities.—At the request of the London Master Builders' and Allied Industries' Association, the Council has directed that a notice should be printed in the R.I.B.A. *Journal* recommending that in the case of ordinary works exceeding £1,000 in value contractors who are invited to tender should be supplied with bills of quantities.

Local Officials and Private Work.—At the request of the Devon and Exeter Architectural Society, the Council has written to the Ministry of Health on the subject of Surveyors and Sanitary Inspectors in country districts doing private work in preparing and submitting plans to their council for approval.

Home Office Regulations for Factories and Workshops.—On the recommendation of the Science Standing Committee, the Council has decided to press for an inquiry to be held by the Home Office before the proposed Regulations under the Factory and Workshop Act for Buildings in course of construction are issued.

Housing Schemes.—On the recommendation of the Practice Standing Committee, the Council has ordered a statement to be printed in the *Journal* on the subject of the relations between consulting architects and panel architects.

Architects' Benevolent Society.—A subscription of £100 has been paid to the Architects' Benevolent Society for the current year.

The Henry Jarvis Travelling Studentship.

The Faculty of Architecture of the British School at Rome has decided that, subject to the approval of the Faculty, the Henry Jarvis student will be allowed to spend six months of his second year away from the School in any part of the Mediterranean basin, it being understood that scholars are allowed under present conditions to travel, during the first and second year, for short periods in Italy and Greece.

International Exhibition at Birmingham.

In connection with an international exhibition to be held at Birmingham next year, a luncheon was held in the Ritz Hotel on Thursday, last week. It was stated that seventy-two acres have been acquired at Edgbaston for the exhibition buildings and pleasure grounds, including a large stadium and sports ground, and an artificial lake, which have been planned with a view to permanence as a means of affording opportunities for amusement, recreation, and instruction to the people of the Midland centre. Mr. A. Parry-Fielder is the architect of the exhibition.

KENSINGTON WAR MEMORIAL.

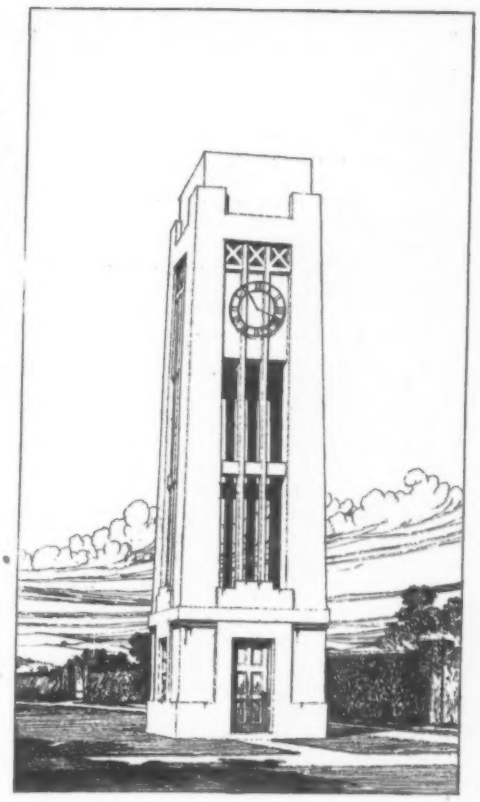
THIS memorial and the arrangements of the site were designed by Major Hubert C. Corlette, O.B.E., F.R.I.B.A., architect, of 2, New-square, Lincoln's Inn, W.C. The sculpture of the large figure and the four angels was executed by Mr. F. W. Pomeroy, R.A., of 15, Kensington-square, W. Messrs Burslem & Son, of Tunbridge Wells, were responsible for all the masons' work and the erection of the memorial, and under their direction the inscriptions were cut by Mr. F. Leppard and the carving by Mr. C. Harris. The masonry, inscriptions, and carving were executed from the full-size drawings and details prepared by the architect. Mr. G. I. Adams, of Tunbridge Wells, supplied and planted the flowers and laid the turf.

The memorial is a fine feature in a prominent position. The design is English in its architectural character. It is Gothic in idea but not mediæval in form, and it makes no effort to pretend that it might have been built during the Middle Ages. It has been erected to commemorate the deeds of men who have lived among us and those who died to defend British institutions, uphold the best traditions of the British character, and preserve for the future a legacy of freedom bequeathed by the past for the benefit of the present generation. As, in this way, it belongs to the events of to-day, it is purposely modern in design. But, in being so it aims at respecting the past traditions of English architecture. It therefore avoids ostentation or strange peculiarities and tries to express a quiet reserve and dignity. It may be said to combine, in its design, a commemoration stone, a pillar of remembrance, and the Cross of Sacrifice. On the large stone at the base there are three inscriptions. That on the front shows to whom the whole memorial is dedicated. And on the west and east sides are separate inscriptions giving a brief extract from the battle record of the battalions which Kensington gave to the nation during the war. A little above this base, and on the stone which forms the support to the principal sculptured figure in the composition, the Arms of the Royal Borough are carved, with the motto "Quid nobis ardui." These are also decorated in heraldic colouring, as was always done during the best periods of English art. Rising from the top of this stone, which provides its pedestal, is the sculptured figure of a woman. She faces towards the main pillar, and with her right hand she lifts up, and places against the memorial, a scroll. In her left hand is a laurel wreath of the victory and honour. The cross is the culminating point of the design, and on it are carried the leaves and fruits of the vine.

ARCHITECTURE AND SOCIOLOGY.

"REGIONAL and Vocational Influences in Architecture" was the title of an interesting address delivered by Mr. Stanley C. Ramsey, F.R.I.B.A., before the members of the Sociological Society on Tuesday last.

In his lecture, Mr. Ramsey showed, with the aid of lantern slides, how the fundamental conditions of place, work, and folk determined and controlled the architecture of all countries and districts. He pointed out that the architecture of ancient Greece, which in his opinion was the finest and most consistent architecture the world had ever seen, was evolved from the nature of the country, obtaining its effect by the use of large, simple, squared stones, or what might be called "quarryman" architecture. From the earliest times the main work of man had been agriculture, and the unimaginative outlook of the peasant could be seen in the towns in the middle of plains, which were apt to be a little dull unless situated on a main channel of communication from which fresh ideas could be obtained. The peasants of the plains were, however, often inspired by the imaginative shepherds of the hills, and when the ideas of the peasant and of the shepherd were incorporated



Water Tower for the All-England Lawn Tennis Ground.
CAPTAIN STANLEY PEACH, F.R.I.B.A., Architect.

in a building some wonderful results were achieved. In districts where the ideas of the peasant, the shepherd, and the quarryman were intermingled, or when peasants and shepherds met sailors (as at a seaport), the best results of all were obtained. The influence of the ship could be seen in many directions in the old wooden houses, especially of Elizabethan times; the many-storied poops of the old ships, for instance, could be compared with the fronts of the old wooden houses, and features of ships, such as ports, could often be discerned in the interior decoration of that period. In earlier times the influence of the woodman could be clearly seen, as in Tudor times, when the buildings were simpler than in Elizabethan times, probably owing to the backward state of sea-voyaging in those days. Later, in Queen Anne and Georgian times, there seemed to be something of a reversion to older traditions, and a return to the more simple, solid elements of building as compared with the Elizabethan era.

With the beginning of the nineteenth century came the great industrial age, and its effect could be seen in the architecture, which, as the industrial revival was chiefly due to the increased use of coal and the consequent great development of coal-mining, might be called "pit-prop architecture." Coal-mining quickly became of paramount importance, and the greatest factor of modern civilisation; the whole industrial prosperity of the nineteenth century was based on coal, and that was reflected in the buildings of the period, which in the mining districts were nothing better than miners' shacks and gin palaces. The influence spread to other districts, and could be seen in the rows upon rows of suburban houses.

He believed, however, that a change was rapidly taking place, and probably the best hope for the future was held out by the dissatisfaction of the people themselves with "miners' camp" architecture. The houses built under the Government housing scheme were a distinct improvement on those built by speculative builders in the past, and the improvement chiefly lay in the elimination of all unnecessary extraneous ornament and a reversion to the effect which was obtained by allowing the elements of building to produce their own architecture.

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ILLUSTRATIONS.

The Cowdray Club and College of Nursing.

The history of this house is quite well known. Situated in Cavendish-square, it, not unnaturally, has been the centre of social and political activity. It was formerly the residence of the Barrington family, but of recent years has been the house of the Asquiths.

Lady Cowdray purchased it with the idea of converting the house into a club. It will be appreciated, therefore, that considerable difficulties had to be overcome in adapting a fashionable town house to the purpose she had in mind. In addition, the College of Nursing building, which shortly is to be erected in the garden of the mansion and facing Henrietta-street, had to be designed in direct communication; for the majority of the club bedrooms will be provided in the latter building.

The architect, Mr. Edwin Cooper, F.R.I.B.A., in making the alterations, had to keep in mind the character of the existing rooms. The house dates from the end of the eighteenth century, and, in treatment, is a fine and typical example of the style then in vogue. It was decided that all additions, details, ornament, &c., should be in thorough keeping and good taste, but, at the same time, of a practical nature, and incorporate the most efficient and modern methods.

On the upper floor there are eight bedrooms, finished in excellent taste, and each bedroom provided with hot and cold water. Besides these there are two bathrooms and lavatories.

The second floor is devoted to a large rest room, from which one gets a magnificent view overlooking Cavendish-square. In the rear are the library, writing, and reading rooms. These rooms, which were originally small bedrooms, have been treated in the Georgian manner and are in character with the house. An effect of lightness is obtained by enamelling all woodwork white.

Descending to the first floor, one finds the large drawing room, which opens on to the flat above the new dining room. This flat has been designed to form an interesting roof garden, which will become an extremely attractive feature. All the rooms on this floor which overlook the square have been remodelled and treated in a fine and suitable manner. A groined ceiling to the corridor, which gives access from the main staircase to the upper floor, is worthy of attention and is refreshingly reminiscent of old work.

The end of the eighteenth century can boast many fine staircases, and the main staircase here, with its painted walls and ceiling, is no exception to the tradition. It is placed in a hall of its own on the left of the main entrance from Cavendish-square. It called for no structural alterations, but has been carefully restored to its original state and colour effect. This treatment of the wall surface is particularly decorative and adds a surprising richness of effect to the staircase hall, which could have been obtained by no other means.

Upon the ground floor, many alterations have been made necessary by the installation of an electric passenger lift. Here, again, the work has been carried out in such a manner that unless plans of the present building are compared with those of the former it is hard to imagine an arrangement other than that now existing.

The room adjoining the ante-room to the dining-room was covered with green silk; on the removal of the silk the original panelling was found, and incorporated in the new work and the whole painted white. The room is now one of the finest on the ground floor. It will be available for private parties.

What was the library is completely remodelled and serves the purpose of the club office, whilst the old dining-room has been converted into the morning room and redecorated.

At the rear of the old building, the new dining-room has been arranged on the main axial line from the entrance door in Cavendish-square. This room has had much time and thought expended upon it. The walls are faced entirely with panelled oak, in character of the same period as the house. This panelling is carried up to the ceiling with finely carved caps to the supporting columns and pilasters. The floor is of oak laid in narrow widths with secret nailing, and the domed ceiling is of plaster. The latter has a circular domed light, the metal work of which is particularly pleasing in design. The spandrils in the dome have delightful modelling in plaster work with four medallions worked in the centre. The medallions contain low relief busts of Florence Nightingale, Nurse Cavell and Viscount and Viscountess Cowdray. The whole room is treated in soft tones, giving it a sense of peace and refinement. Adjoining the dining-room is the service room, with lifts and stairs to a kitchen below. In the basement, the kitchens and service rooms are all carefully worked out, and, in their way, are as interesting in fittings and equipment as any part of the club. No labour or expense has been spared to equip this unit in as fine a manner as possible.

Every detail for the welfare and training of nurses, which Lady Cowdray has so much at heart, has been gone into most carefully. Both Lord and Lady Cowdray have given much time and thought in helping to produce what is now about to take concrete form.

A feature of the furnishing is the substantial and handsome character of everything throughout. All small or light things are avoided, the object being that the Club shall contain nothing but what is serviceable. There are a number of beautiful old Sheraton and solid mahogany tables, and the electric light fittings are particularly attractive, many of them being of cut glass, while all have a special character and individuality.

Practically everlasting in wear are the black morocco leather chairs in the ante-room on the ground floor. Here, too, is a beautiful Georgian grate and mantelpiece harmonising with the Kent sideboards and old Kent stools by the fireplace. The old panelling of the walls and pilasters, with the curtains of yellow and black velvet, gives a delightful home aspect.

The clocks on the ground floor are fine modern timepieces set in a representation of the rising sun, which is part of the Cowdray crest.

The rugs are Scotch hand-made, the product of a new industry.

In the drawing-room, the prevailing colours of which are blue and fawn, the chairs are Chippendale in style. The beautiful old Chippendale bookcase and table and the gilt Louis XV couch are the gift of Lady Denman. The large mirror over the mantlepiece is old Italian. Outside the drawing-room are placed two old Empire chairs.

The contractors of the dining-room, gymnasium, &c., were Messrs. John Mowlem & Co., Ltd.; and for the alterations to the club, Messrs. John Greenwood, Ltd.

The sub-contractors are as follows:—Heating and ventilating engineers, and kitchen equipment: Messrs. Mumford, Bailey & Preston; electrical engineers: Messrs. Higgins & Griffiths Ltd., 21, Orchard-street, W.1; metalwork and windows, and electric fittings: Messrs. Wm. Smith & Son, 1, Balcombe-street, Portman-square, W.1; marble work: Messrs. J. Whitehead & Son, Kennington Oval, S.E.; fibrous plaster: Messrs. De Jong & Co., Ltd., 84, Albert-street, N.W.; locks and door furniture: Messrs. J. Gibbons, Ltd., 15, Fisher-street, W.C.; sanitary fittings: Messrs. Emanuels, 7, George-street, Manchester-square, W.1; lifts: Messrs. Smith, Major & Stevens, Ltd.; dining-room tables and chairs, carpets and floor coverings and special fittings: Messrs. J. P. White & Sons, Bond-street and Bedford.

MEETINGS.

SATURDAY, *July* 8.

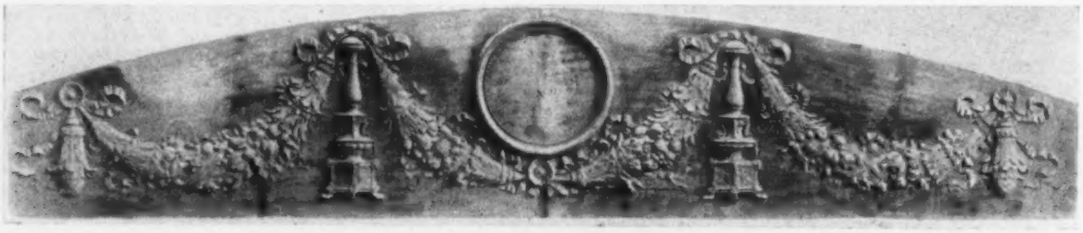
Edinburgh Architectural Association.—Annual Excursion to Stirling Parish Church and Stirling Castle, &c.

WEDNESDAY, *July* 12.

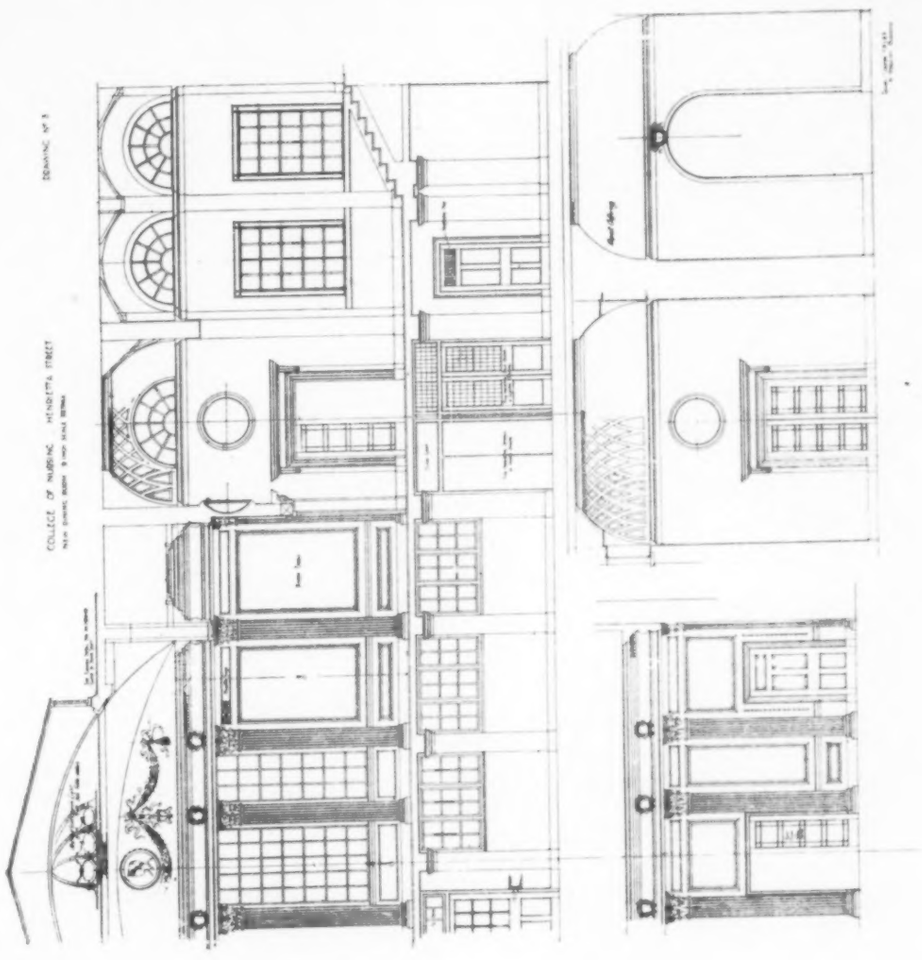
Northern Architectural Association.—Evening Meeting. Visit to Heworth Quarries.

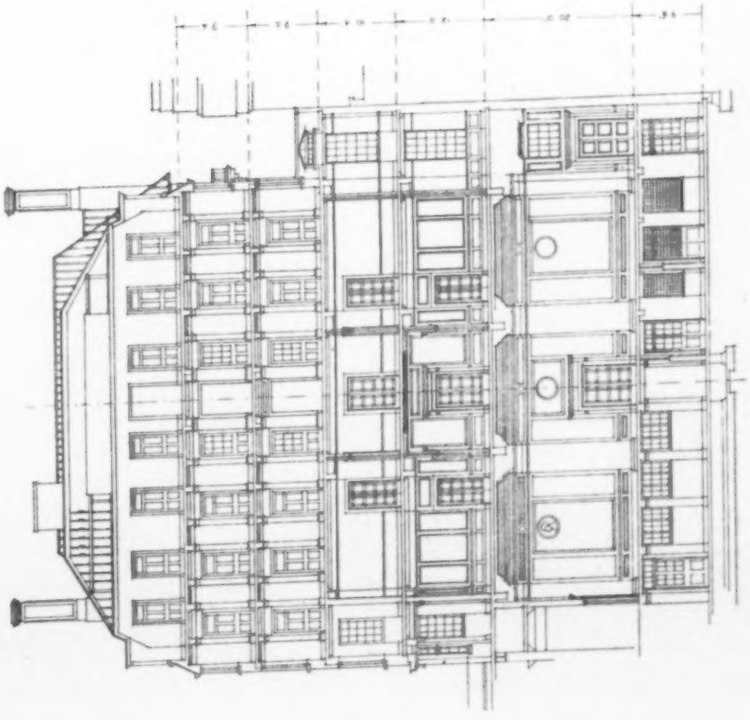
Keble College (Oxford) War Memorial.

The Bishop of Winchester, on Wednesday last week, dedicated at Keble College, Oxford, a memorial to about 180 members of the college and servants who gave their lives in the war. The names are inscribed on oak panels in the cloister leading to the college chapel. The memorial is from designs of Mr. F. C. Eden, a former member of the college.

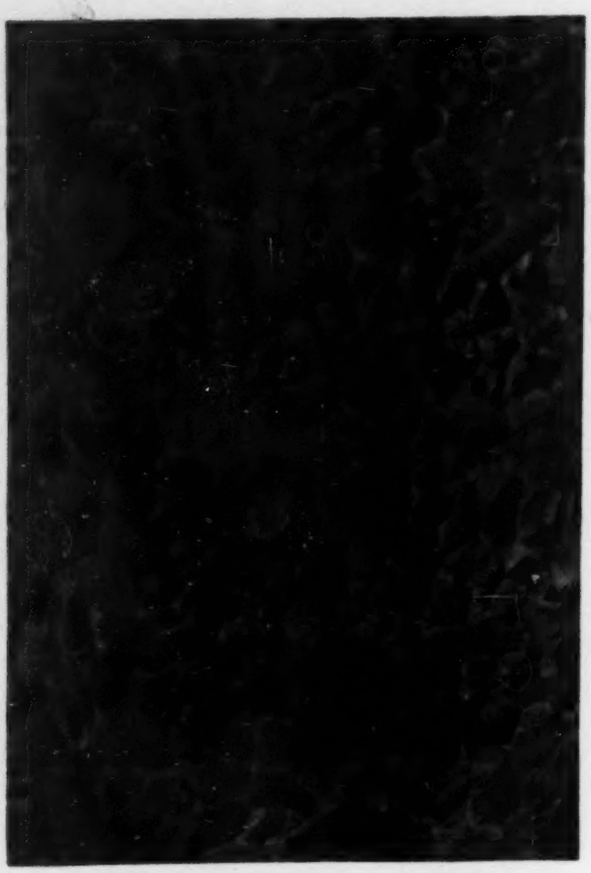


The Cowdray Club and College of Nursing: Plaster Decoration in Dining Room.
MR. EDWIN COOPER, F.R.I.B.A., Architect.



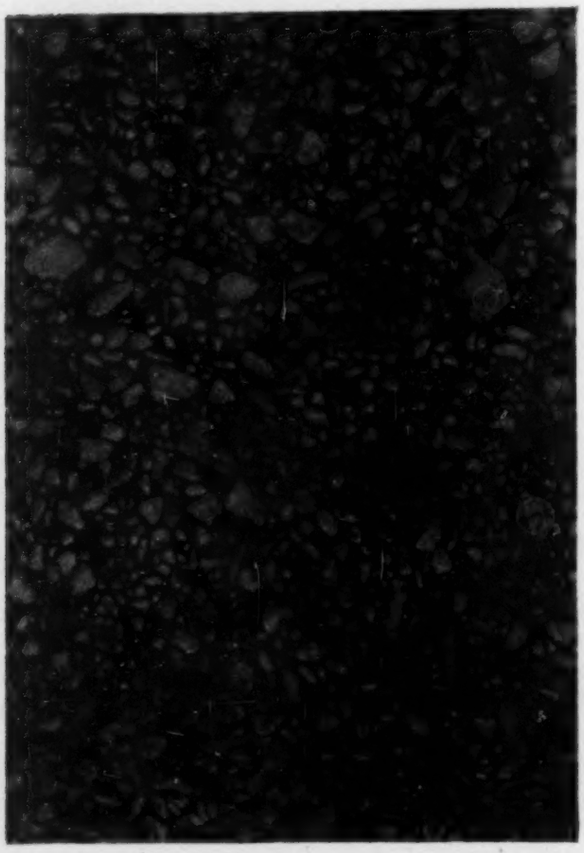


The Cowdray Club and College of Nursing MR. EDWIN COOPER, F.R.I.B.A., Architect. (*See p.* 12.)



WITH CRUSHED FLINT AND LIGHT SAND AS AGGREGATE.

WITH BLACK GRANITE AS AGGREGATE.



WITH WHITE MARBLE CHIPPINGS AS AGGREGATE.

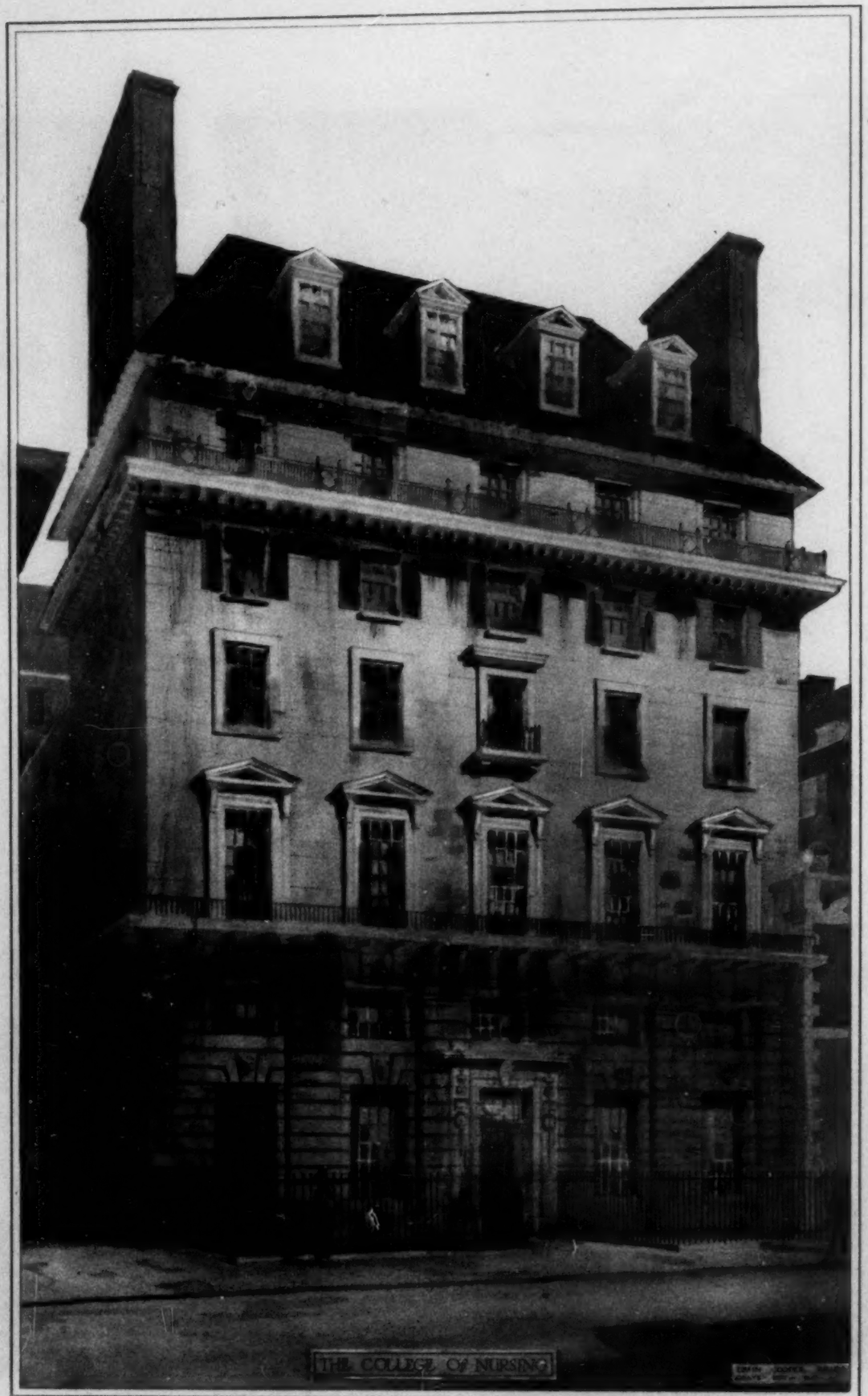
WITH GRAVEL AS AGGREGATE.

THE COLOUR TREATMENT OF CONCRETE.

DINING ROOM.

THE COWDRAY CLUB AND COLLEGE OF NURSING, CAVENDISH SQUARE AND HENRIETTA STREET, W.

MR. EDWIN COOPER, F.R.I.B.A., ARCHITECT.



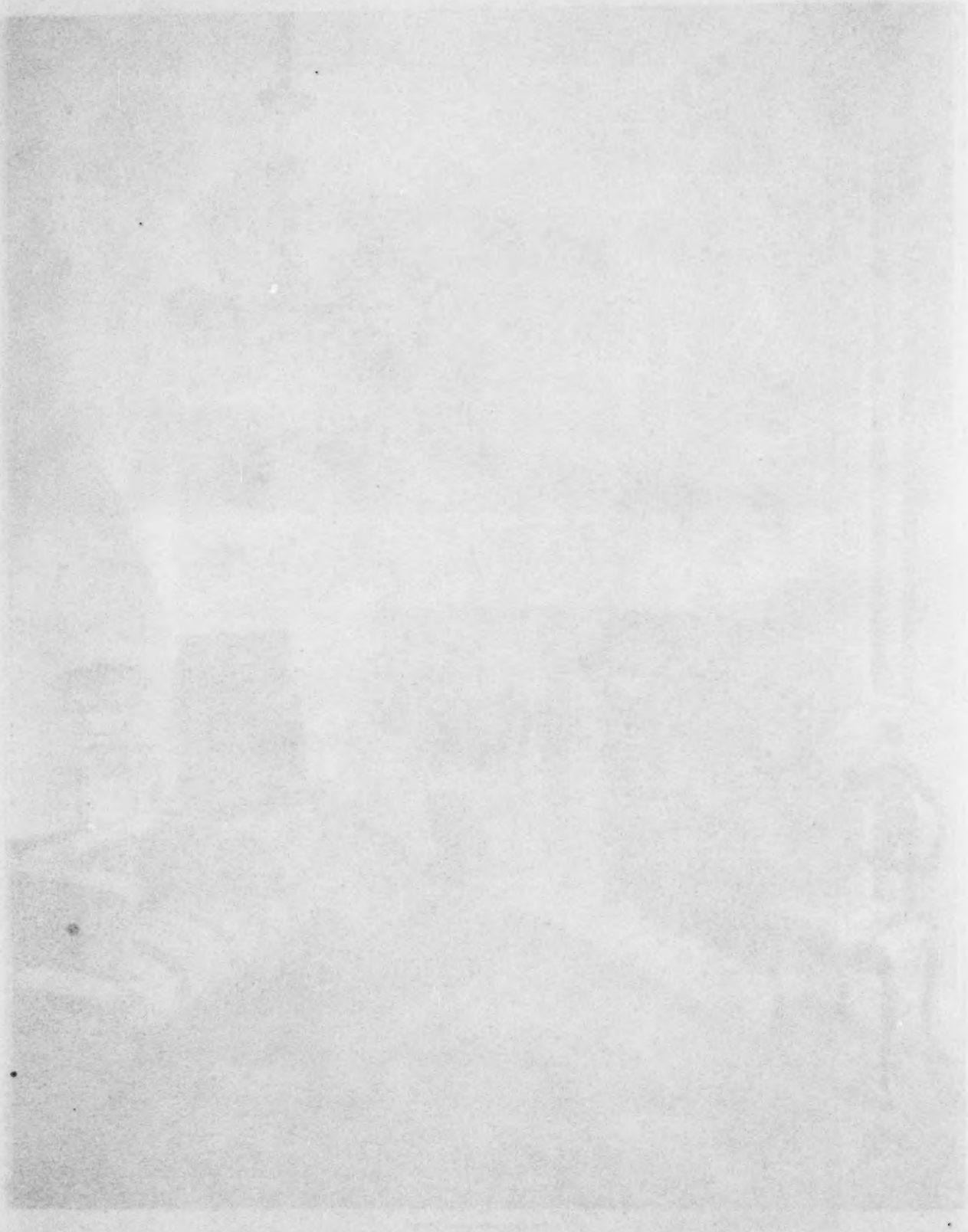
THE COWDRAY CLUB AND COLLEGE OF NURSING, CAVENDISH SQUARE AND HENRIETTA STREET, W.

MR. EDWIN COOPER, F.R.I.B.A., ARCHITECT.

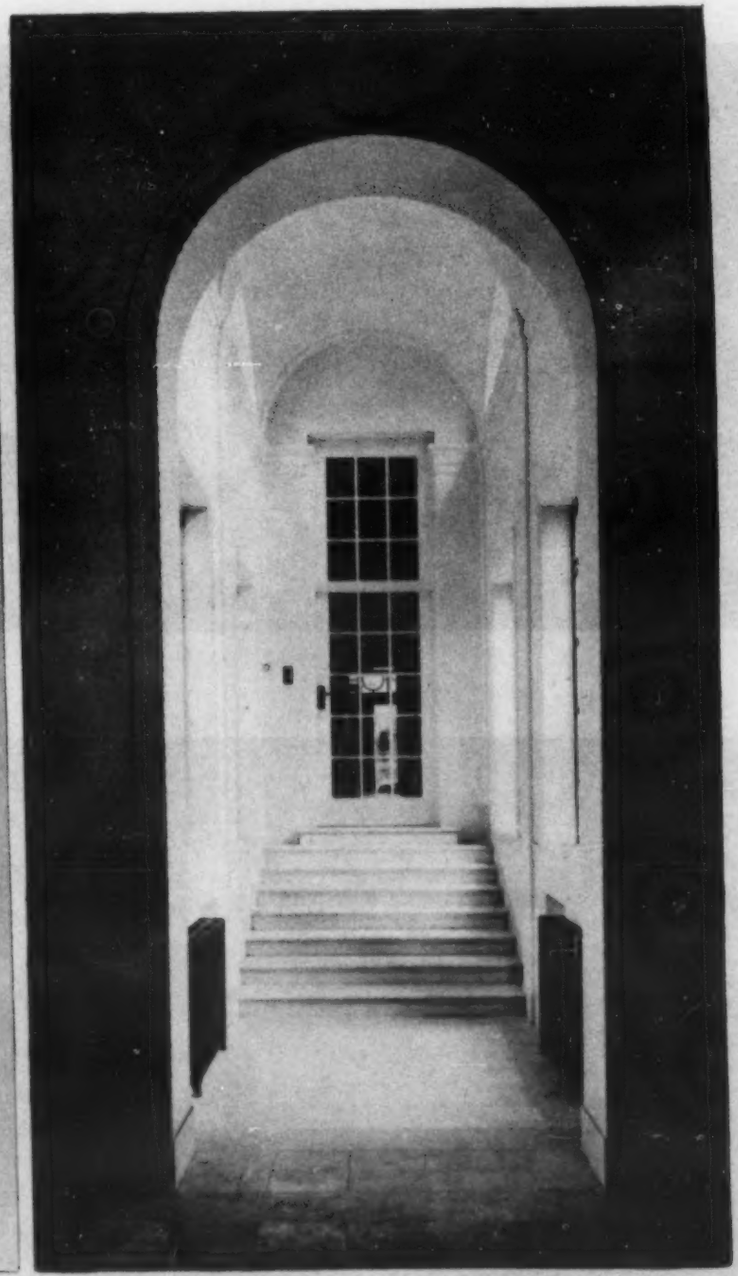
SMALL DRAWING ROOM.

THE COWDRAY CLUB AND COLLEGE OF NURSING, CAVENDISH SQUARE AND HENRIETTA STREET, W.

MR. EDWIN COOPER, F.R.I.B.A., ARCHITECT.



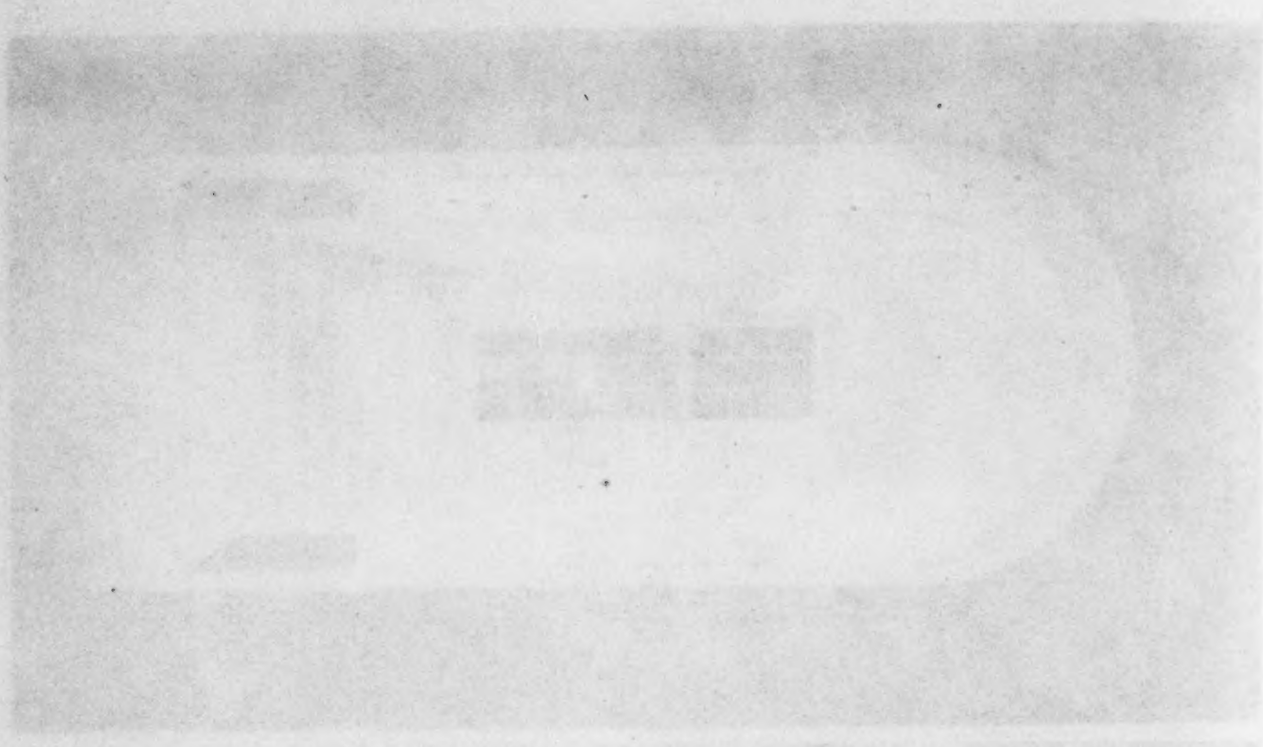
FIRST FLOOR LANDING.

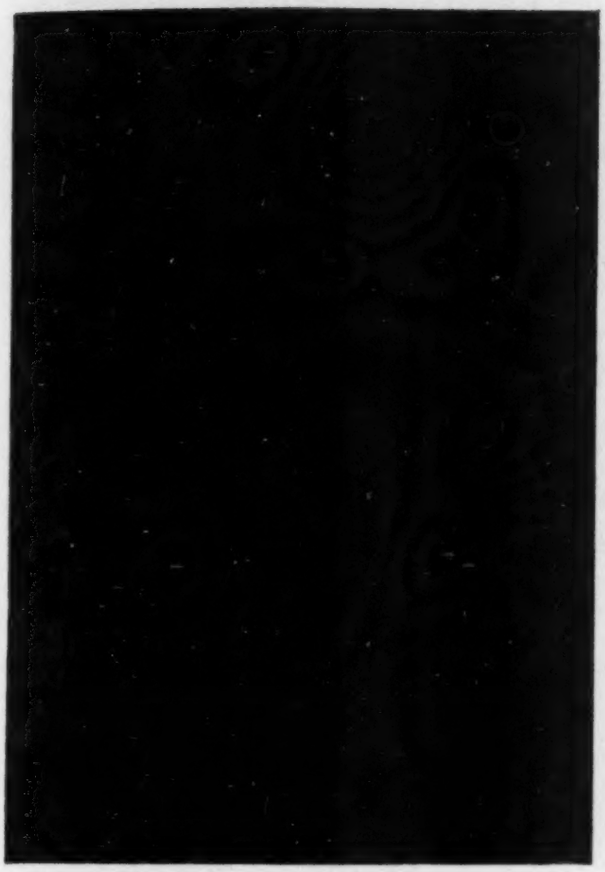


CORRIDOR FROM DINING ROOM.

THE COWDRAY CLUB AND COLLEGE OF NURSING, CAVENDISH SQUARE AND HENRIETTA STREET, W.

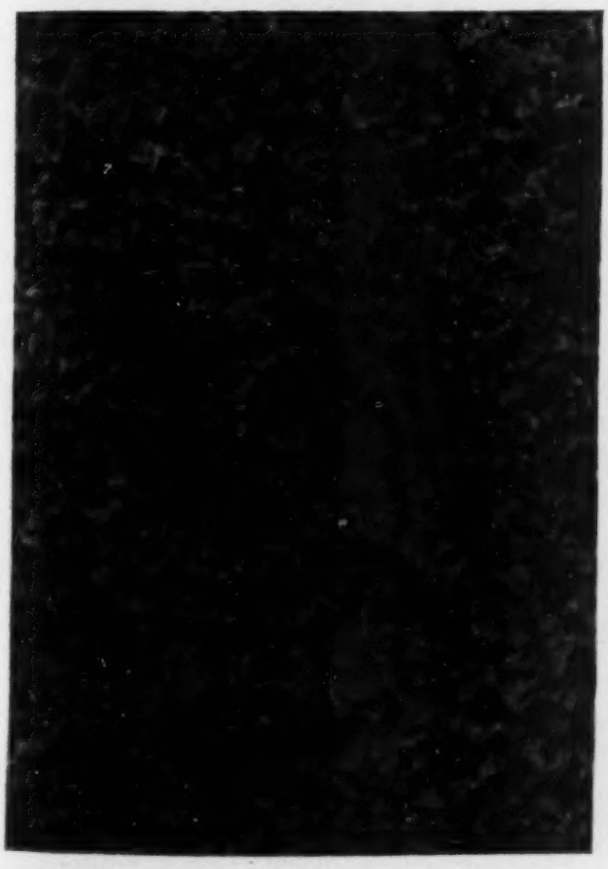
MR. EDWIN COOPER, F.R.I.B.A., ARCHITECT.





WITH CRUSHED FLINT AND DARK SAND AS AGGREGATE.

WITH RED GRANITE AS AGGREGATE.



WITH MIXED RED AND BLUE GRANITE AS AGGREGATE.

WITH PEA-SHINGLE AS AGGREGATE.

THE COLOUR TREATMENT OF CONCRETE.

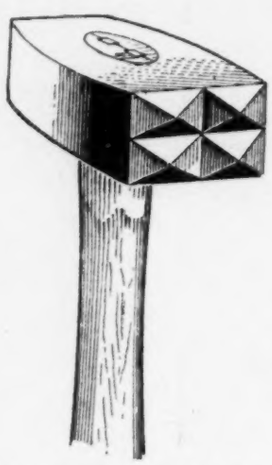
THE SURFACE TREATMENT OF CONCRETE.

In view of the interest which is now being taken in the subject of the colour decoration of buildings, we give on the preceding two pages some illustrations, in colour, showing what can be done in this direction with concrete. These eight illustrations are of sample pieces of concrete in which different kinds of aggregate have been used to produce the colour, and, of course, by the use of other aggregate, or by mixing different aggregates, almost any desired shade or texture may be obtained. Although this method of obtaining coloured buildings has not been much used in this country, it has been fairly common in the United States of America and on the Continent for some years past, and is being used abroad to an increasing extent. In this connection it is interesting to note that what is stated to be the tallest reinforced concrete building in the world—the "Hide and Leather Building," New York—has been treated in this manner. In this building, the exterior of the walls for a depth of about 2 in. was composed of a mixture of one part Portland cement and two parts coloured aggregate, composed of quartz, feldspar and greenstone chips; after being left to season all the winter the cement was removed from the surface by bush-hammering, with the result that what is described as "a very fine surface finish indistinguishable from granite" has been obtained on the lower stories, while on the upper stories a different effect has been obtained by smoothing the surface with an electrically-operated grinding machine.

In the forefront of the claims put forward on behalf of this method of treating concrete surfaces is economy in first cost as compared with a stone-faced building. "If it be admitted that reinforced concrete is the most suitable material with which to erect large fire-resisting buildings," its advocates argue, "why go to the expense of covering up an already structurally sound building with stone, marble, or any facing at all, when such excellent texture, and colour effects far removed from the dull grey of concrete to which we have become accustomed, may be obtained at a negligible cost in addition to that necessary for the erection of a sound building? If, as is contended in many quarters, it is desirable to have coloured and more cheerful buildings in our streets, is it not cheaper to use a material for construction with a permanent colour throughout which can be kept at its original brightness by washing down or by the steam-cleaning process?" This, we can admit, is a very strong point in its favour at the present time, when cost is still a deterrent to much work being put in hand. The well-known Kodak Building in Kingsway, and other large reinforced concrete buildings, have shown what can be done with plain concrete by careful attention to proportion, and, by the judicious use of the colour effects which may be obtained by exposing the aggregate of which the building is constructed, a wide field of new possibilities is opened up to the architect.

From the æsthetic point of view, it is claimed that to disguise a reinforced concrete building with stone is to attempt to deceive the public into believing a building to be what it is not, and therefore bad art; if reinforced concrete is to be one of the chief constructional materials of the future it should be frankly accepted as such, and allowed to develop a style of its own, in which the colour of the aggregate might very well take its place. And we must not forget that the monotonous grey with which concrete has become associated is not really the body of the concrete at all, but a film of cement which is forced to the sides, against the shuttering or mould, by the pressure of the concrete above and by tamping; and that to expose the aggregate, which usually forms 80 or 85 per cent. of a concrete wall, is but to reveal the true material.

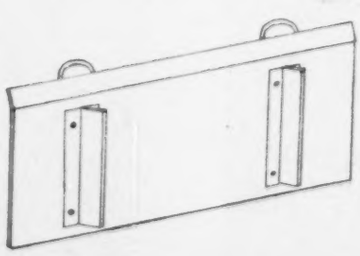
There are three methods of removing the coating of cement from a concrete surface, namely, scrubbing, tooling, and sand-blasting. The removal of the mortar film by brushing is best performed after the concrete has set but while it is still green, and to this end the forms must be removed as soon as possible without injury to the structure. How soon this may be will depend upon the character of the structure, the consistency of the mixture, and the weather. No definite rule can be laid down, but in cold weather it is necessary to keep the forms in position longer than in hot weather.



BUSH-HAMMER FOR TOOLING CONCRETE SURFACES.

An ordinary scrubbing brush or a wire brush used with a liberal application of clean water will generally serve the purpose if the concrete is not too hard, but if it is found that the colour of the aggregate is not fully brought out by this treatment a solution of hydrochloric acid diluted with three or four parts of water may be employed. Where this is done, care must be taken that every trace of the acid is immediately removed from the surface of the concrete by well washing with pure water, preferably by means of a hose. By this method the aggregate is brought into semi-relief and its colour is fully revealed.

It sometimes happens that shuttering cannot be removed before the concrete is too hard for the brushing treatment; when this is the case, another method is available, that of bush-hammering. The action of the bush-hammer, the face of which is cut into broad-based teeth, produces an effect similar to that obtained in the process of brushing, by cutting away the cement



IRON SHEET USED IN THE APPLICATION OF SPECIAL FACING MIXTURE.

mortar and leaving the aggregate exposed. If necessary, the acid solution may be used as a clearing agent to supplement the effect of the tooling. This form of treatment should not be applied until the concrete is thoroughly hard, say, in six or eight weeks; otherwise there is a danger that, instead of the film of mortar only being removed, the particles of the aggregate itself may be dislodged, leaving unsightly pits.

Sand-blasting is another means by which the same purpose may be effected when the concrete is hard. In this process a fine stream of sand is forced through the nozzle of a compressed-air machine, and, by impinging sharply upon the concrete surface, removes the mortar from the face of the aggregate.

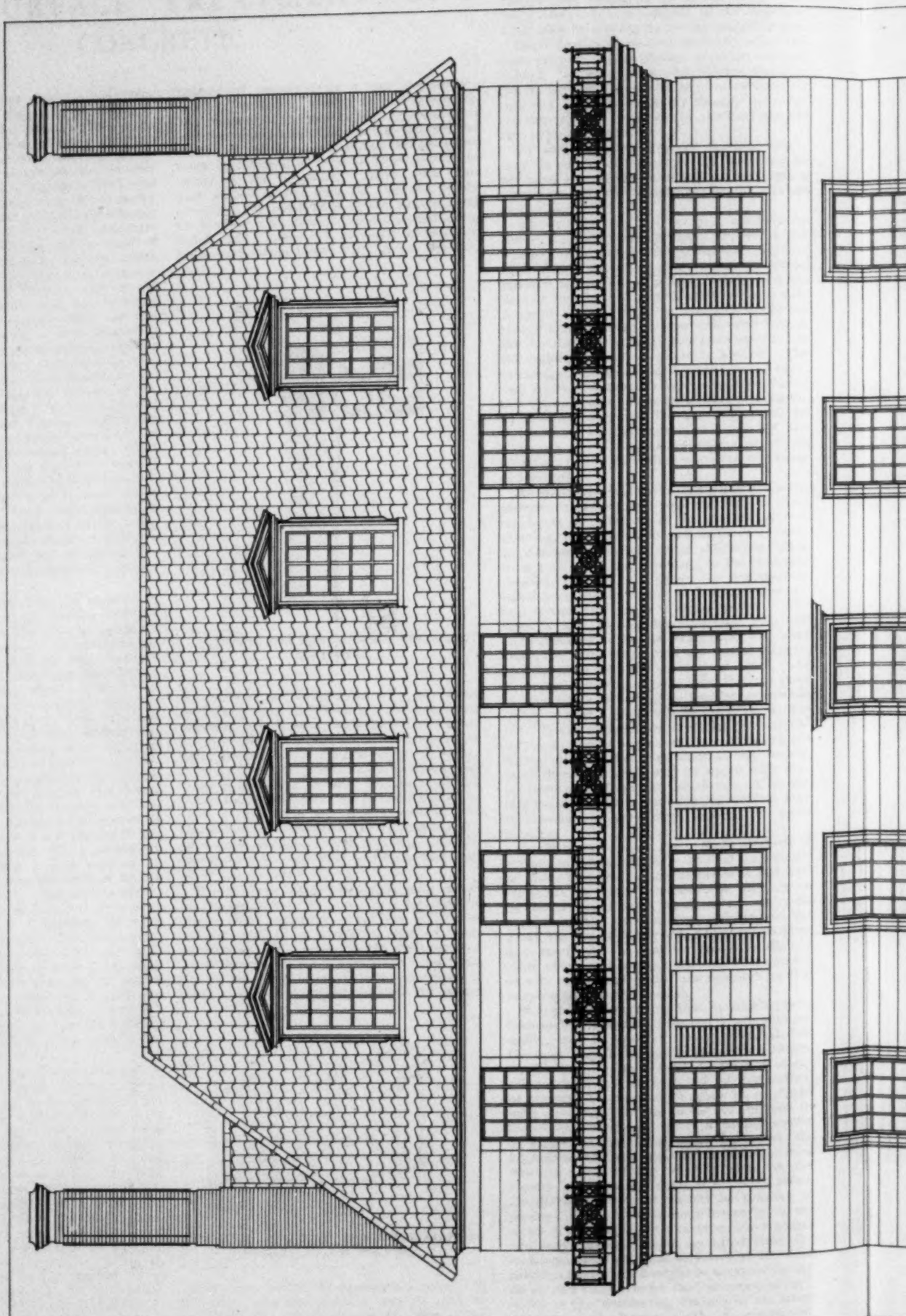
By either of these methods excellent effects may be produced, and many of these can be obtained by the use of common and inexpensive aggregates, as will be seen by the illustrations in this issue.

Where, however, the cost of a specially selected material would prohibit its use for the whole of the concrete work of the walls, another method may be employed by which the special mixture is applied as a facing material only, backed by the ordinary concrete of the wall. A simple method of doing this is to apply the facing mixture to the surface of the wall form to the thickness of 1 in. or 1½ in. immediately before the ordinary concrete is placed in position. The tamping should be confined mainly to the backing, which will then be driven into the facing and the aggregate of the latter forced outwards, so that not only will the two thicknesses be formed into one homogeneous body but the aggregate which it is desired to expose will be found at or near the surface when the shuttering is removed.

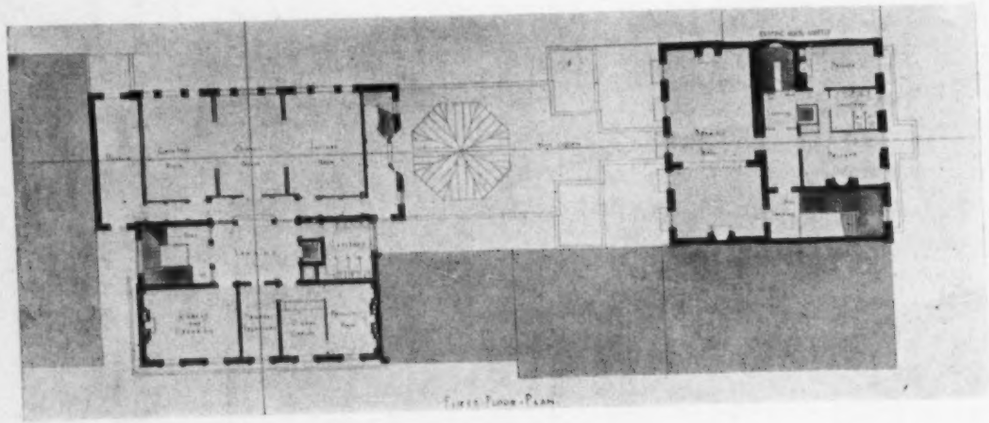
An alternative method of depositing the facing mixture in the required position, and one often employed in America, is by the use of iron sheeting, which is placed inside the wall form, its distance from the outer shuttering being from 1 in. to 1½ in., according to the thickness decided upon for the facing; to this sheeting handles are usually affixed to facilitate removal, and vertical angle irons to act as spacers. The form is thus divided longitudinally into two compartments, which are then filled with concrete, the outer space with the special mixture and the inner with the ordinary material. As the compartments are being filled the iron sheet is gradually withdrawn, the backing meanwhile being tamped against the facing. To obviate the difficulty experienced in placing the material within so narrow a space as that containing the facing mixture, the iron sheet is not usually more than 1 ft. high, and its upper edge may be bent away from the face-form. After the shuttering has been removed the surface may be treated by scrubbing, tooling, or sand-blasting.

In all concrete work where these methods of surface treatment are to be applied care should be taken that the face-forms are true and that the joints are tight; a better finish will thereby be obtained, and much labour saved. In order to prevent the material from sticking to the wood, the face of the boards which are to come in contact with the concrete should be slightly oiled, either with a rag moistened with paraffin or with one of the special oils supplied for this purpose now on the market.

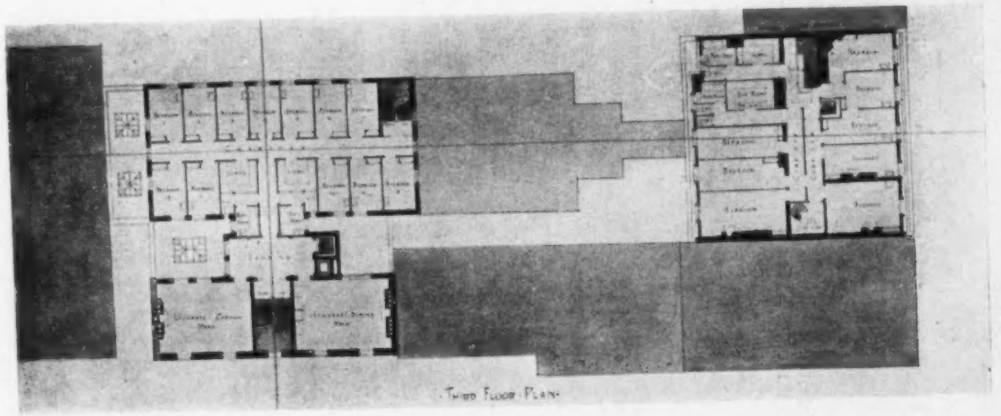
Where the design requires it, architectural features which cannot be formed *in situ* with the walling may be made in moulds and treated in the same way before being placed in position. In the design of small houses, also, the colour effects which may be obtained by this method of treating concrete might often be employed with advantage, for its use is not confined to monolithic structures. It is a simple matter to scrub the surface or otherwise expose the aggregate of blocks made in the usual form of concrete block-making machine now on the market, and by using stone of different colour for different blocks it should be possible to produce innumerable colour schemes by means of which dwellings—both working-class cottages and larger houses—might be lifted from the ordinary. Further, good architecture in which colour is incorporated might be accepted by the public as a substitute for the "ornamentation" which is the dominating feature in so many pre-war small houses, with a consequent improvement from the architectural point of view.



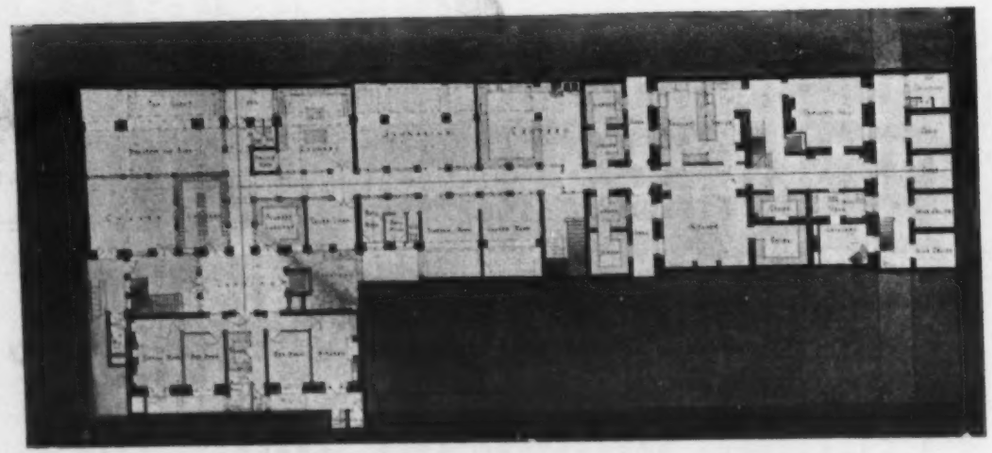
THE COWDRAY CLUB AND COLLEGE OF NURSING, CAVENDISH SQUARE AND HENRIETTA STREET, W.
MR. EDWIN COOPER, F.R.I.B.A., ARCHITECT.



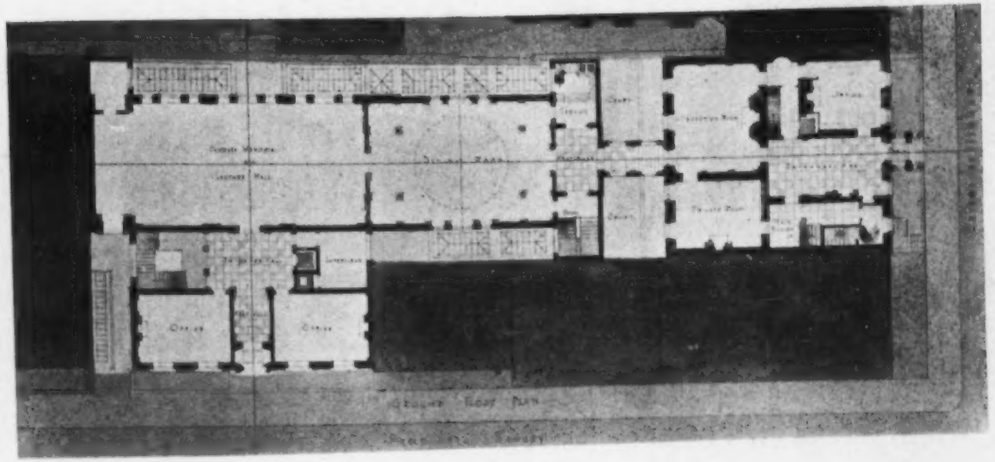
FIRST FLOOR PLAN.



THIRD FLOOR PLAN.



BASEMENT PLAN.



GROUND FLOOR PLAN.

The Cowdray Club and College of Nursing. MR. EDWIN COOPER, F.R.I.B.A., Architect.

LIVERPOOL UNIVERSITY SCHOOL OF ARCHITECTURE.

STUDENTS' EXHIBITION.

THE annual exhibition, which was opened on June 30 by the Right Hon. Lord Riddell, shows again the strength and vigour of this veteran school. Veteran it is because, in spite of the fact that it is only 25 years since the first professor was inaugurated, almost all of the other ten recognised schools in the United Kingdom are Liverpool's junior in years, experience, size and importance. In the academic year just closing, the students numbered about 130. Eight have taken the B.Arch. degree with honours, others have taken the B.Arch., the Diploma in Architecture and the Certificate in Architecture. The plethora of the different distinctions is very bewildering—apparently, after three years a student is entitled to a certificate; after five years a Diploma. The degree of Bachelor in Architecture is confined to those who have matriculated and taken the five-year course.

This year the exhibition is arranged in one of the ground floor rooms of the Walker Art Gallery. The location shows the increasing interest which the City of Liverpool takes in the University—an interest which must be a mutual advantage. The drawings of first year students are entirely omitted, and very few are shown of the second year work. Space is allotted to other years in a carefully graduated degree—the fifth year getting nearly half. The School is fortunate in being able to compete for the Lever Prize and for the Honan Travelling Studentship. Several designs for each are shown. Comparison between this exhibition and previous ones is very favourable to both staff and students. Greater attention is now given to planning, and the curriculum has been so arranged that more time is devoted to construction. It is surprising to hear that Mr. Marshall, with one assistant, has been responsible for teaching elementary and advanced construction to the whole school. The results indicate a strenuous year's work, and the School is to be congratulated, but we hope that, eventually, it may be found possible to provide a third instructor. The School, a few years ago, could not have produced drawings which show the deep knowledge of workaday problems evinced by Mr. W. Dougill in his wonderful set of drawings for a city bank, or by Mr. P. B. Haswell for a building for storing documents. Another interesting set by a student from Egypt shows from what distant places the Liverpool School attracts capable men.

The preliminary studies for the Prix de Rome have the place of honour. Messrs. Welsh, Dougill, Checkley and Arthur have worked on very different lines. On other occasions the preliminary sketches have been rather too much mere variations of one leading motif. The final efforts by which Mr. Welsh and Mr. Checkley added lustre to the School by winning the double event, were shown by a portfolio of photographs. Mr. Arthur's wonderful dexterity in the use of chromes, blues and greens, was again in evidence. Some drawings by Miss Doris Debert, a third year student, by various touches showed how his colouring is appreciated by his juniors. That the School maintains its reputation for draughtsmanship and colouring is shown by the great majority of the drawings. Perhaps Mr. D. L. Bridgewater, especially in his measured work, gets even beyond the high standard to which we are accustomed. The lighter side of the training was illustrated by a number of seven-hour Esquisses for coloured posters. All show the proper spirit of abandon and gaiety; those by T. Theo Wills were the best. He has the making of an artist and a humorist—a combination more usual in France than in England.

It is possible that with different assessors the verdict for the Lever 1922 prize, a city square, might have been different. The greater imagination of the winner is unsatisfactory in several details and lacks the restraint of that placed second.

Professor Reilly and his staff are to be congratulated just as much on the high standard reached by all the exhibitors, as on their good fortune in providing the winners of both the Prix de Rome and the Jarvis in the same year.

The exhibition was opened by Lord Riddell, who said that one reason why architecture had made such a great advance in America was that there the architect was not always so anxious to express himself as the English architect seemed to be. He was prepared to copy more and to make a greater use of ancient models. It was obvious that the number of forms which could be employed for architectural design was limited; and if those lines were twisted unduly into new shapes the result was likely to be that the buildings would be lacking in the symmetry, the dignity and the charm which they should possess. He had some knowledge of the great work which Professor Reilly was doing for architecture, not only in Liverpool, but throughout the country. He was one of the few men who were spreading the true gospel of improved architectural attainment throughout the land. It would be a great mistake to think that architecture was not progressing in England. Although not very much was said about it, architecture was making great advances. London, for example, was rapidly becoming not only one of the most interesting and one of the busiest cities in the world, but also one which possessed the finest examples of modern architecture.

Professor Reilly said that the Rome scholarship, which was founded in 1913, was not, as some people seemed to imagine, confined to Liverpool competitors, although it had been won by Liverpool students three out of the five times it had been held. Of the ten competitors who entered for the 1922 competition from Liverpool, only two were rejected, and of the nine who were selected for the final examination eight were Liverpool students. In recent years the engineering and constructional departments of architectural work had been made features of special development at the Liverpool school, and the students were taught how to think out the smallest details of construction in the same fashion as was adopted in America. Consequently, students who completed their five years' course went out fully equipped, not only as regards design, but as regards constructional engineering as well. The nine men who were receiving their degrees this year were fully equipped, both as artists and engineers, to tackle the problems of such buildings as the Dock Board and the Cunard offices.

The Examinations have been completed, and the results of the five-year course, leading to Degree or Diploma, published. In all architectural and constructional subjects the work for the Degree and Diploma courses is identical for the five years, the only difference being that the Degree men have matriculated before entering the University and the Diploma men have not. The percentage of failures was about five, and these students have to remain in their year and take the year's course over again, which generally means they leave the school. This shows how the schools act as a sieve through which only the better men can proceed.

The list is as follows:—

Degree of B.Arch. with Honours in Architectural Design.

FIFTH EXAMINATION.

Class I.

E. R. Arthur (Rome Finalist, 1920, '21, '22).
G. Checkley (Rome Finalist, and Jarvis Scholar, 1922).
W. Dougill (Rome Finalist, 1920, '22).
E. W. Martin (Rome Finalist, 1922).
S. Welsh (Rome Finalist and winner, 1922).

Class II.

J. S. Allen. J. H. Forshaw. P. B. Haswell.

Degree of B.Arch.
(Old Regulations.)

FINAL EXAMINATION.

A. C. Holliday (*with Distinction*).

Degree of B.Arch.

FOURTH EXAMINATION.

Honours in Architectural Design.

J. S. Allen.
D. Brooke.
W. B. Edwards (Rome Finalist, 1922).
E. H. H. Higham (Rome Finalist, 1922).
S. E. Mahon (Honan Travelling Scholarship).
G. L. Owen.
H. W. Pritchard.
E. Williams (Rome Finalist, 1922).

Honours in Architectural Construction.

H. F. Billimoria.
C. H. Hutton.
L. John.
M. Raafat.
H. Williams.

THIRD EXAMINATION.

E. H. Ashburner.
C. T. Bloodworth.
D. L. Bridgwater.
R. W. Donaldson.
L. S. Elton.
A. L. Gabr.
J. C. Gorrie.
L. C. Howitt.
W. V. Jenkins.
J. H. Miller.
J. H. L. Owen.
H. S. Silcock.
R. H. Turner.

SECOND EXAMINATION.

F. N. Astbury.
H. L. Barton.
H. C. Machon.
C. A. Minoprio.
H. A. Peters.
C. C. Shaw.
T. T. Wills.

FOURTH EXAMINATION.

Distinction in Architectural Construction.

R. H. Jones.
T. Yoxall.

Ordinary Diploma.

H. Hirst.
Doris Musker.
H. G. Simms.
A. C. Townsend.
E. G. Woolley.

THIRD EXAMINATION.

W. Beeston.
Doris D. Debert (1st Lever Prize, 1922).
G. C. Douglas.
C. G. Edwards.
J. R. Furbur.
O. H. H. Nuttall.
Doris Oversby.
C. J. Priestley.
F. X. Velarde.
A. I. el Wahhaby.

SECOND EXAMINATION.

A. D. R. Cowley.
F. H. Crossley.
R. E. S. Dean.
Doris E. Dixon.
H. B. Evans.
H. L. Fox.
M. Roushdy.
Frances H. Silcock.
H. Thearle.
G. I. Thomas.
Maud A. M. Wall.
Sheelah A. Wilkinson.

FIRST EXAMINATION.

W. R. Alderson.
J. J. Badger.
G. A. Butling.
Norah Dunphy.
T. C. Haynes.

Certificate in Architecture.

Class I.

E. H. Ashburner.
W. Beeston.
C. T. Bloodworth.
D. L. Bridgwater (Holt Travelling Scholarship).
Doris D. Debert.
R. W. Donaldson.
G. C. Douglas.
C. G. Edwards.
L. S. Elton.
J. R. Furbur.
A. L. Gabr.
J. C. Gorrie
L. C. Howitt.
W. V. Jenkins.
O. H. H. Nuttall.
Doris Oversby.
J. H. L. Owen.
H. S. Silcock (2nd Lever Prize).
R. H. Turner.
F. X. Velarde.
A. I. el Wahhaby.

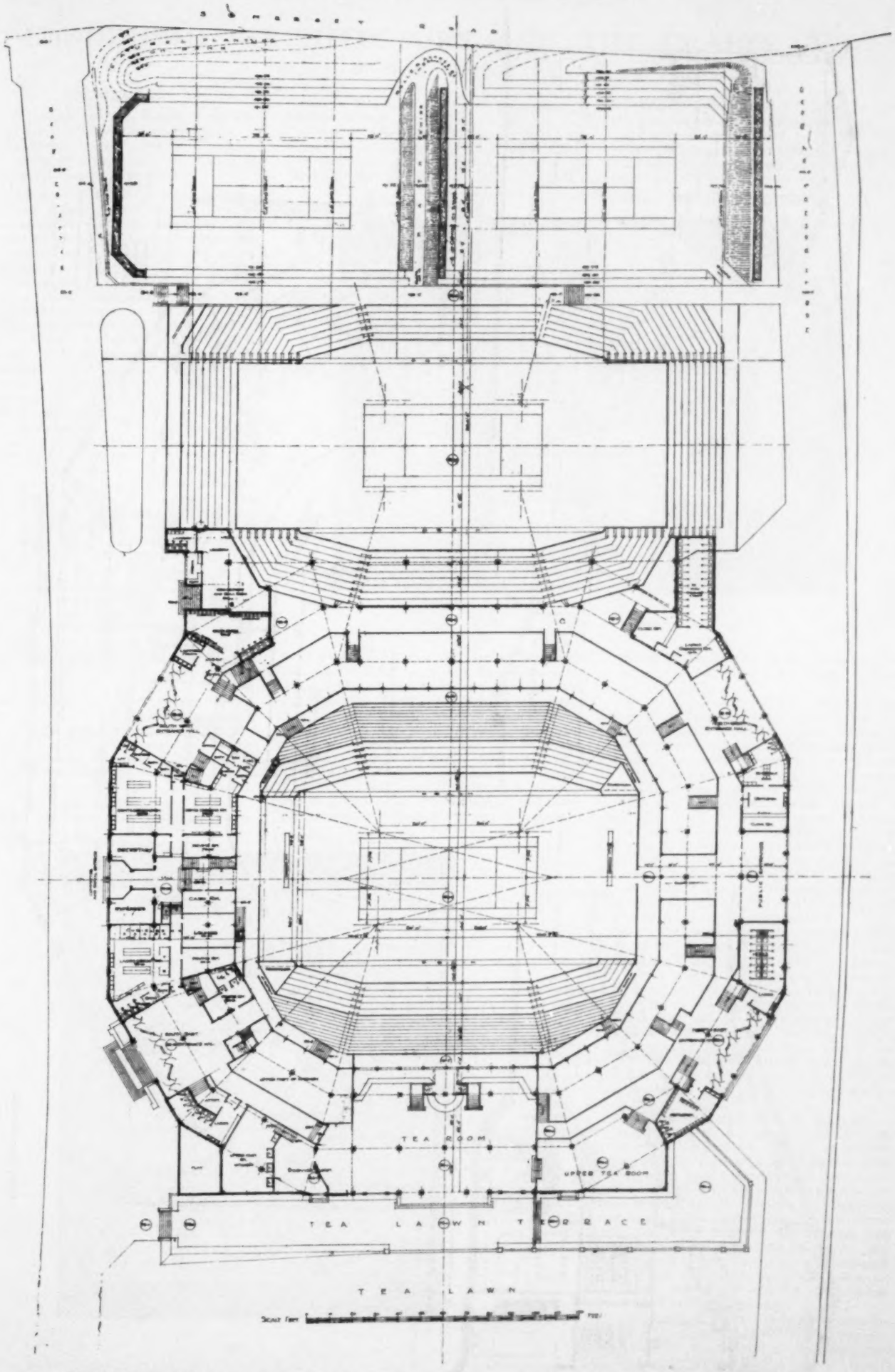
Class II.

J. H. Miller. C. J. Priestley.

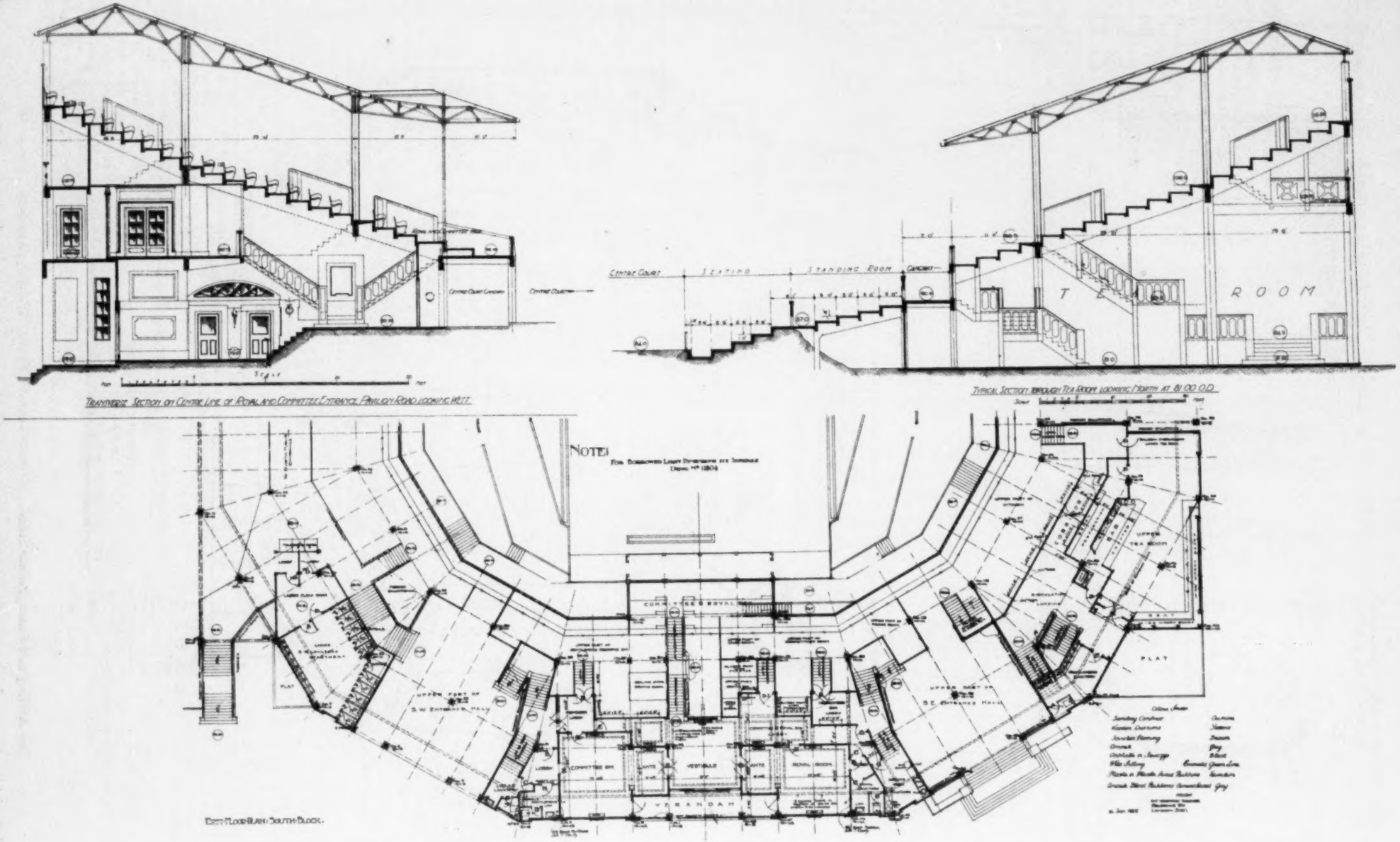
Certificate in Civic Design.

Class I.

E. R. Arthur.
G. Checkley.
W. Dougill.
S. Welsh.



The All-England Lawn Tennis Stand. CAPTAIN STANLEY PEACH, F.R.I.B.A., Architect. (*See p.* 8.)


Transverse Section on Centre Line of Royal and Committee Entrance, Pavilion Road looking West
Typical Section through Tea Room looking North at 81 00 O.D.
Centre Court
Seating
Standing Room
Tea Room
Note:
Upper Tea Room
Play
Ground Floor Plan South Block.

The All-England Lawn Tennis Stand. Captain Stanley Peac.., F.R.I.B.A., Architect (*See p. 8.*)

LONDINIUM: ARCHITECTURE AND THE CRAFTS.—VII.

BY W. R. LETHABY.

THE MOSAICS.

Here is grandeur of form, dignity of character, and great breadth of treatment which reminds me of the best Greek schools. Were I a painter I should venture to enlarge upon the quality and distribution of colour.—WESTMACOTT.

SOME screen appears to be set up between us and our Roman works of art. Even the mosaics, which we might have supposed would have been interesting—even fascinating—seem to be regarded as mere museum objects and subjects for antiquarian tracts. So far as I know there is only one book which considers them as a whole (Morgan's *Romano-British Mosaics*), and this is rather a full index than a discussion of their artistic qualities. An excellent chapter in Ward's *Roman Buildings* should be mentioned. Even professional scholars apologise for them. Dr. Haverfield wrote: "They have the look of work imitated from patterns rather than of designs sketched by artists." . . . "We admire them mainly, I think, because they are old and expensive. Few Romano-British mosaics are real works of art."

Against such a judgment I will call three witnesses—Westmacott, the sculptor, as above, William Morris, the master pattern designer, and Mr. Alfred Powell. Morris says: "This splendid Roman scrollwork, though not very beautiful in itself, is the parent of very beautiful things. It is perhaps in the noble craft of mosaic that the foreshadowings of the new art are best seen. There is a sign in them of the coming wave of the great change which was to turn late Roman art, the last of the old, into Byzantine art, the first of the new." Mr. Powell, who repaired the Orpheus Pavement at the Barton, Cirencester, and became thoroughly acquainted with the powerfully-drawn animals on it, says: "These creatures of the forest have been set out here in the tiny scraps of coloured stone with an ease and mastery that is remarkable. There is grace in their gesture that has seldom been reached in the art of even the highest period of the life of a nation." The Woodchester Orpheus Pavement, which, judging from points of resemblance in design and details (a horned and bearded griffin, for instance), must have been by the same master, was a magnificent work, as, indeed, the fragment of its splendid border in the British Museum is enough to show.

Completer lists of London mosaics than I can attempt here have been given in other places (see Morgan's Romano-British Mosaics, C. Roach Smith's Roman London, and V.C.H.). Here and there all over the city at depths of from about eight to twenty feet pavements have been found submerged by the rising levels of the ground. Scores have been noted, many must have been destroyed without a record, and doubtless some yet lie hidden to-day. In an old MS. Common-place Book I have is the following note: "On Wed., Aug. 15, 1733, some bricklayers digging foundations in Little St. Helen's, Bishopsgate, discovered a Roman pavement, which by ye inscription [?] had been laid about 1700 years ago. It appeared a very beautiful prospect, being in mosaic working, the tiles not above an inch square."

My purpose is to record a few fresh observations, to bring out by grouping and comparison some general inferences and indications of date, to evoke, if I could, some clear idea of the buildings to which such things belonged, and to prepare the way for a full study of these remarkable works.

FIG. 1.

FIG. 2.

The Bacchus Mosaic.—The central panel and fragments of borders of this mosaic are in the British Museum. A careful original drawing of the whole is at the Society of Antiquaries, and an admirable engraving by Fisher was published in 1804 (Fig. 1). It was found in 1803 under East India House, Leadenhall-street. The patterned part of the pavement occupied a square of about 11 ft., "the whole was environed by a margin consisting of coarse red tesseræ an inch square traced to the extent of 5½ ft. on the N.W. side—[note that it and the building it occupied was diagonal to the points of the compass]—but could not be followed further. The room could not have been less than 22 ft. square; but was *in all probability considerably larger.*"

The central panel of Bacchus reclining on a Tiger, at the Museum, has been restored and repolished. It may not now seem very attractive, but it is most competent in the balance of the forms and the strong, even fierce, drawing of the tiger; its bold eye, gleaming teeth, powerful paws, and the baggy skin of the legs are wonderfully truthful (Fig. 2). Notice that Bacchus carries a wine cup; this is the essential part of the design of the mosaic which doubtless was the floor of the central hall of an important house. The brighter coloured tesseræ are of coloured glass.

The Bacchanle Mosaic.—One of the finest of the London mosaics was found under the old Excise Office, Broad-street. I have an original drawing of it by Fairholt, dated March 1, 1854 (Fig. 3). The best authorities are two large original coloured drawings, one by Archer in the British Museum and the other at the Society of Antiquaries. The central panel had a white ground and black border; the Nymph had reddish flesh and a light greenish scarf; the Panther seems to have been a grey-buff spotted black. There was much black and white in the pattern work, and some of the fillings were of black and white triangles.

It was described at the time of finding as having formed a square of 28 ft.; it was diagonally about N. and S. and 15 ft. below the

surface. The central subject was "Ariadne or a Bacchante reclining on a panther." In V.C.H. it was said to be "Europa on the Bull," but the drawings agree with the description. The composition is very similar to the Bacchus, and doubtless a wine cup was held by the

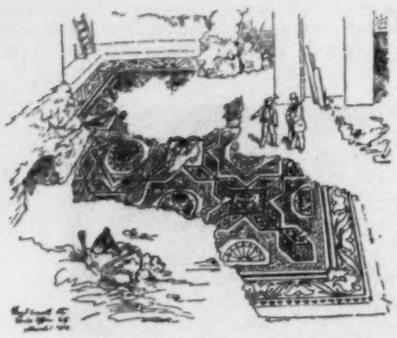


FIG. 3.

Bacchante also. Notice that vases appear elsewhere in the design. This panel was about 2½ ft. square. This fine floor was taken to the Crystal Palace, where it seems to have disappeared. From its size and subject we may suppose that it was the floor of the central dining hall of some big house. The drawing and balanced design of the central group is wonderfully skilful as space filling. Fig. 4 is based on original drawings of the floor at the Society of Antiquaries and the British Museum and a sketch in the Wollaston Collection at S. Kensington. This mosaic should be compared with a floor found at Bignor, which is very similar in its details, and probably, I think,

FIG. 4.

by the same artist. Here the centre is occupied by Jove's eagle and Ganymede, the cup-bearer to the gods.

Vase-Panel Mosaic.—In his account of discoveries at Bucklersbury, Price describes a floor found in St. Mildred's-court which must have been one of the finer kind. "A square enclosed a circle containing a vase in brown, red and white with the addition of bright green glass. Around the vase there appeared portions of a tree with foliage; also an object resembling an archway with embattled figures and other objects, the meaning of which is difficult to describe without an illustration. Around the whole were two simple bands of black tesseræ separating the circle from an elaborate scroll of foliage and flowers analogous to that on one of the pavements at Bignor. At each corner was a flower showing eight petals of varied colours. From the centre of each sprang two branches, which united in a leaf in form like that within the scroll. The entire design is bordered by the guilloche in seven intertwining bands of black, red, brown and white tesseræ. A drawing of this interesting floor was in the possession of Mr. G. Plucknett." The central panel must have been a formal landscape—a large wine krater backed by a tree and an arcade with figures on the parapet. In another place Price names it again amongst mosaics which had glass tesseræ; probably the tree was of green glass. This pavement also doubtless occupied a dining-hall. In an earlier account (Lon. and Mx. Archæol. Soc. Proceed. III) Price says: "When perfect it was of some extent, resembling those discovered at East India House and the Excise Office. In the centre was a vase similar to those at the Excise Office and around it a scroll of foliage beautifully arranged. The fragments were packed in cases and sent to the workshops of Messrs. Cubitt."

An Orpheus Mosaic (?).—Roach Smith reported the existence, below Paternoster-row, of what must have been an exceptionally fine pavement, which was broken up before any proper record of it could be made. This "superb pavement extended at least 40 ft.; towards the centre were compartments in which in variegated colours were birds and beasts surrounded by a rich guilloche border." The wording suggests a square room and the two former examples show that large square rooms existed in London. In the villa at Woodchester the chief central room was nearly fifty feet square; the pavement had "a central circular compartment; within the border was a wide circular band containing representations of animals, within was a smaller band containing birds; on the southern side was a figure of Orpheus." The description of the London mosaic suggests that it, too, had for subject Orpheus charming the beasts. It was found about 1840 at a depth of 12 ft. In 1843 part of a mosaic floor, "with birds and beasts within a guilloche border," was found at a depth of 12½ ft. below the offices of the Religious Tract Society at the corner of Cannon-row (V.C.H.). Is it not probable that this was another part of the pavement described by Roach Smith?

Inscribed Floor.—A mosaic pavement found in Pudding-lane as lately as 1886, and bearing an important inscription, was destroyed before any sufficient record of it was made. A printed version of the lettering was given in the *Archæological Journal* of the same year by Dr. Haverfield, with some comments. (Also see S. A. Proceedings, XIV, 6, and V.C.H.) In the collections of the Society of Antiquaries I find a sketch of it by Henry Hodge, a careful draughtsman of the time. This drawing is said to have been made "from a sketch by I. W. Jolly and fragments," so that its strict accuracy is questionable. It appears that it was complete on the right but imperfect on the left-hand side. On the right some parts of the pattern covering the rest of the floor and a border are shown and some dimensions are given. It looks as if the panel was about 5 ft. across and was the centre of a strip 7 ft. or 8 ft. wide. The letters were about 3 in. high, black on a white ground; the last four seem to have been D. S. P. D.—*de sua pecunia dedit*—and this would imply that the mosaic belonged to a temple. The destruction of these mosaics is a sad witness to the nineteenth-century type of intelligence. Of all of them only the fragments of the Bacchus pavement are now known to exist. I should like to find out what became of the Bacchante pavement sent to the Crystal Palace, and whether the vase mosaic is still in packing cases at Messrs. Cubitts. I wonder, too, what became of Mr. G. Plucknett's drawing and wish I could get tidings of it. The great pavement in Paternoster-row seems to have been destroyed without even a drawing being made, while the sketch taken by Mr. Jolly of the inscribed floor has, so far as I know, been burnt. And this was the high age of university education!

Bucklersbury.—The most perfect of the existing mosaics is the complete and restored pavement with an apsidal end found in Bucklersbury. A good account of it while yet in its place is given in *The Builder* (1869): "It lies fresh and bright as when it was first put down. . . . It is to be hoped that some pains will be taken to trace the remaining walls of the building to which this speaking pavement belongs." Here, again, although the apartment was not large and the ornamental mosaic was more than a central panel, there was a broad border of the coarse tesseræ. Besides having been a saving, the contrast of the plain red with the variegated central area seems to have been liked. The interlacing squares of this pavement resemble those of the Excise Office floor, and its central rose is like a panel in the same floor. An angle filling is similar to a quarter of the central pattern filling the centre of the small India Office pavement, which, again, had interlacing squares. A single cross-like pattern filling a panel in the British Museum is again like that of the India Office mosaic. Many such references could be carried much farther, not only in regard to London pavements but including the country ones also. I reach the conclusion that they are for the most part nearly of the same date, and that many were by the same artists.

Fenchurch-street.—A fragment of what must have been a fine floor was found in 1859 and is now in the British Museum. It is part of a panel which contained a vase and two birds. An illustration given in Price's "Bucklersbury" shows that there was a margin of coarse tesseræ beyond and that the panel must have been one of a series making up a handsome border. Roach Smith described it as part of "what would seem to have been an extensive pavement," and he calls the bird a peacock. A good coloured drawing of the fragment in the Archer Collection shows the bird's neck a bright blue; the blue tesseræ were of glass. Fig. 5 is from

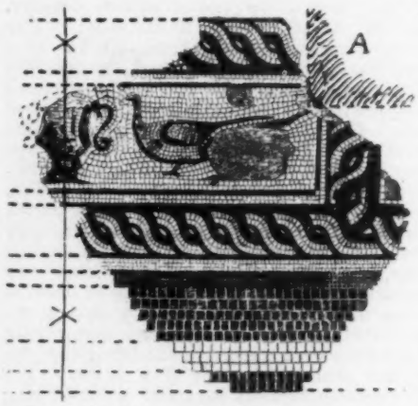


FIG. 5.

Price, but I have dotted in on the top right-hand corner the line of a more modern building from Roach Smith's illustration. This is one example of many cases in which more recent walls have been carried up from the Roman level and square with a Roman building. (A in fig. and compare Fig. 3.)

Birchin-lane, &c.—In 1785 a small piece was discovered here of "a fine tesselated pavement of very small bricks and stones; of this, only one corner appeared, which is composed of black, green, and white stones and brick, forming a beautiful border." Another account says that "the tesseræ measured about one-quarter of an inch and were of various colours." I am particular about this, for the bright colours were doubtless of glass. I find a contemporary drawing of this fragment in the Guildhall Library, from which it appears that there was a

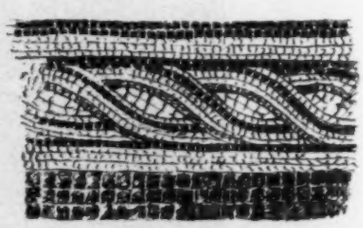


FIG. 6.

fair blue besides the colours mentioned. It was a border of a rather unusual pattern, but one similar is illustrated by Mr. Ward (Fig. 6). Outside it were big red "brick" tesseræ. There is in the Guildhall Museum a fragment of

another mosaic find in Birchin-lane. It is part of a star-shaped-all-over pattern of a well-known type (the Barton, Cirencester, &c.). Fig. 7 A shows the fragment and Fig. 8 is a diagram of the complete pattern. Another piece at the Guildhall has a sea-monster of small scale but

FIG. 7.

most skilful execution. The place of finding is not noted, but it is probably a fragment discovered in Birchin-lane in 1857, described in V.C.H. as part of a pavement "representing a sea-horse." Two other small pieces in the same museum are very similar in colour and quality

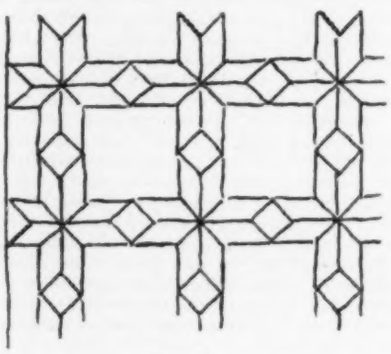


FIG. 8.

and may have come from the same source. One of these seems to have belonged to a pavement of square panels of knot-work framed in scroll bands (Fig. 7 B). Morsels of painted plaster were also found in Birchin-lane, where there must have been a good house.

A fragment of mosaic at the London Museum comes from another all-over star-pattern similar to that at the Guildhall, but this piece was next to the outer border of the pavement. This fragment is of particularly beautiful colouring—quite a purple floor. I give a sketch of the fragment in Fig. 9; it must have come next the border of a pattern like Fig. 8.

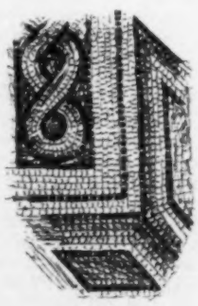


FIG. 9.

Leadenhall-street.—Several pieces of London mosaic are shown in the Roman corridor at the British Museum, but not very effectively. Two are exhibited as given by Mr. E. Moxhay, but it is not added that they were found in Leadenhall-street in 1841. One is part of a passage and the other is a square from the centre of a room. (See illustrations in Roach

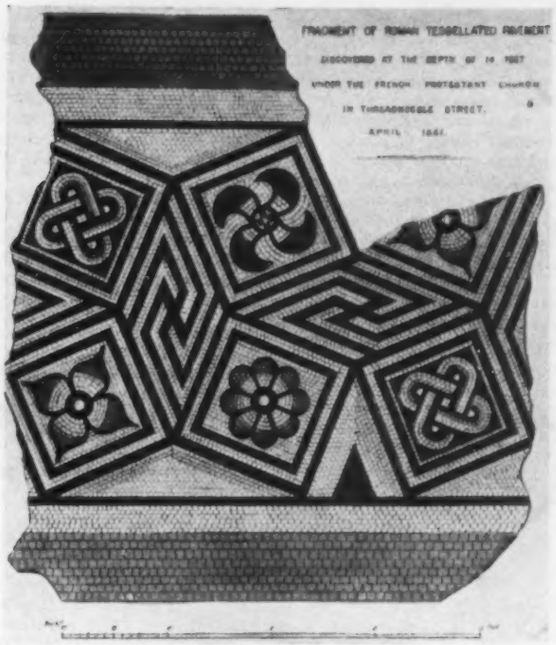

FRAGMENT OF ROMAN TESSELLATED PAVEMENT
DISCOVERED AT THE DEPTH OF 10 FEET
UNDER THE FRENCH PROTESTANT CHURCH
IN THROGMORTON STREET.
APRIL 1841.

FIG. 10.

Smith's "Roman London" and Fig. 10.) Another piece found at East India House, Leadenhall-street, is not set up rightly. The pattern is of two interlacing squares; the margin should not be parallel to either of these, but it should touch two of the points of the star form. (Fig. 11, see Sir W. Tite's illustration in *Archæologia*; compare also the Bucklersbury pavement at the Guildhall.) This floor came from the same level as the Bacchus mosaic and not far away from its position; probably the small chamber to which it belonged was part of the building

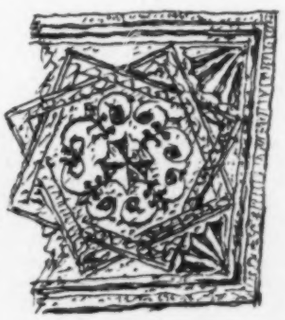


FIG. 11.

which contained the large square hall of the Bacchus mosaic.

The Bank.—A fourth piece is a square panel from Lothbury. Allen describes it as "An ornamental centre measuring 4 ft. each way of an apartment 11 ft. square; beyond this were tiles of an inch square extending to the sides of the room." It is another example of the plan of having a comparatively small central panel liberally framed in much plain red work. The device in the centre is a cruciform pattern. I can hardly think that from, say, 250 A.D. it would not have been recognised as a cross, indeed. Simple as it is, this panel is a masterly design, and it is very delicately coloured.

* * * *

The floor mosaics at the British Museum are dispersed in two galleries and a staircase, and even so each one is badly presented. Fragments of the Bacchus floor are shown without any key plan of the whole. Of five on the north wall of the Roman gallery, the place where only one was found is told. The interesting little Orpheus mosaic discovered at Withington is shown by three single fragments, although an excellent restored engraving was published in *Archæologia* when it was found. I wish space could be found for setting them in their due relation and completing the composition in outline. The surfaces require cleaning and some repolishing. The floor from Thruxton on the north staircase has lost its centre since it was engraved. The engraving itself is shown in the gallery a hundred yards away without any reference from one to the other. In this case, I think, the centre should be painted in on the plaster filling of the original.

These mosaics must have been drawn out on the levelled beds prepared to receive them by the master artist and filled in by him and his assistants. The preparation for such a floor is made clear in the description of a London mosaic found in 1788: "This pavement, as well as most of the rest, was laid in three distinct beds; the lowest very coarse, about 3 in. thick, and mixed with large pebbles; the second of fine mortar, very hard and reddish in colour, from having been mixed with powdered brick; this was about 1 in. in thickness, and upon it the bricks [tesseræ] were embedded in fine white cement" (*Archæol.*, vol. viii). The Bacchus pavement described before "was bedded on a layer of brickdust and lime of about an inch." Powdered brick (tile) and lime made a strong cement which would finish perfectly smoothly and provide an inviting surface to draw and work upon.

Several mosaics while not quite plain were simpler in design and perhaps coarser in execution than those already described. A star-shaped fragment found in Bishopsgate-street, illustrated by Roach Smith, was of black and white tesserm. It was probably the central panel of a floor, as Roach Smith said. A mosaic found at Lincoln had a similar star-shaped panel at the centre. About 1840 a tesselated pavement was found in Bishopsgate Within "of black and white tesserm in squares and diamonds" (V.C.H.). In Bush-lane "a pavement of white tesserae" is recorded. On the site of the Guildhall "irregular cubes of dark grey slate and white marble" were found (B.A.A., xix).

Another pavement found in Lombard-street, in 1785, was "composed of pieces of black and white stone one-third of an inch square probably deposited in regular order" (*Archæol.* viii). These black and white mosaics were doubtless like the counter changed patterns found at Wroxeter, Silchester, &c. At the latter the Christian church had a square space for the

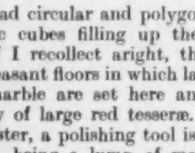
altar paved in this way. This was probably a fourth-century fashion. The others may be a little earlier generally, but they overlapped the Christian period. Many floors have been found in London which were wholly of coarse tesseræ of red, or of a few simple colours accidentally distributed. One of these is described as of irregular tesseræ about 2 by 1¼ in., mostly red, but some black and white. A room 17½ by 14 ft. in Leadenhall-street had coarse tesseræ red, black and white 1¼ in. square, and a similar floor "of red bricks about an inch square with a few black ones and white stones" was found in Lombard-street. In Rochester Museum is a small tile crossed by indented lines making it look like a group of tesseræ. Some floors found at

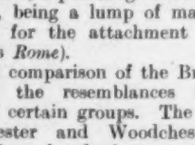
FIG. 12.

Silchester had circular and polygonal tiles used with mosaic cubes filling up the interspaces. At Bath, if I recollect aright, there are fragments of pleasant floors in which larger irregular pieces of marble are set here and there in a floor mainly of large red tesseræ.

At Silchester, a polishing tool is said to have been found, being a lump of marble with an iron socket for the attachment of a handle (Middleton's *Rome*).

A general comparison of the British mosaics brings out the resemblances between the members of certain groups. The similarity of the Cirencester and Woodchester Orpheus pavements has already been mentioned. The London floor found at the Excise Office was very like the mosaics at Bignor in both the patterns





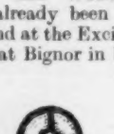


FIG. 13.

and figure work. The same pavements resemble others found at Silchester, and also the Cirencester and Woodchester mosaics. A pavement found at Stonesfield, near Woodstock, had a wreath of foliage springing from a head similar to that of Woodchester. It is obvious that elaborate works in isolated villas cannot have been home made, and it is likely that this group at least was the work of craftsmen established in some central city. No centre is so likely as Londinium, a wealthy town, the most conveniently placed for the importation of materials. We think of these works as "decadent," but really there was a new life in them. The centre of origin of the later type seems to have been Alexandria and similar works to our own are found in Asia Minor, N. Africa and Gaul. The use of glass in these mosaics is likely to have been an Alexandrian innovation. Price gives a list of five London mosaics in which glass was used, and I may add the fragment at Birchin-lane described above. Glass was also used at Cirencester and Woodchester; the purple tesseræ from the fine border of the latter in the British Museum must be glass.

Taking into consideration the great similarity of mosaics found in the East—those from Halicarnassus, for instance, now in the British Museum—to those found in the West, the character of the patterns, the mystical nature of some of the figure designs, and the swift

FIG. 14.

ability of the workmanship, I am drawn to the conclusion that the craftsmen are likely to have been Greeks. Some confirmation of this is to be found in the fact noticed by Wright that the Greek H sometimes appears for E in the few mosaic inscriptions which exist. They must, I think, have been works of the prosperous Constantinian age. The floor at Frampton had a XP monogram on it (Fig. 12); the Orpheus pavement at Horkstow accepted as Christian by Cabrol had crosses (Fig. 12); and a second one at Winterton has a red cross by one of the animals; the pavement at Thruxton, in the British Museum, has crosses set in the border

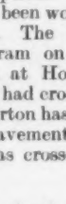


FIG. 15

in what seems to be a significant way (Fig. 13) The other details on this figure also have a Christian look; the top one is from Bignor, the bottom one at Frampton. Fig. 14 is from the Orpheus mosaic at Withington. If one Orpheus pavement was Christian the others are likely to have been so too; at least, they symbolise the Harmony of the Universe; they are not mythological. These pavements are evidence of the cosmopolitan nature of Romano-British culture.

Any idea of thought in decoration is difficult for us to apprehend. The records of the pavements which have been found in Britain

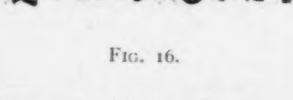


FIG. 16.

deserve study from this point of view. The whole art of the time witnesses not only to the professional skill of artists but to the thoughts and desires of the provincial Romans—and natives too, doubtless—who demanded such works. They speak of a time when the old beliefs had been for a large part allegorised and fitted into a sort of poetic cosmogony; the designs often dealt with the order of Nature. Many interesting details are to be found in these mosaics; Fig. 15 is a sundial which appears with a celestial sphere on the pavement at Bramdean. The fragment of inscription (Fig. 16) is from Thruxton.

EXHIBITION NOTES.

THE BALTIC EXCHANGE: MEMORIAL STAINED GLASS.

A SERIES of stained glass windows has been placed in this building to the memory of the fallen members of the Baltic Exchange. They occupy a situation in one of the recesses in the interior of the Exchange, the roof of which is of glass and slightly dome-shaped. The subject of the memorial is "The Temple of Fame," and the half dome, which is in three main divisions, has in the centre a design of "Victory," and on either side, "Triumph" and "Peace." The walls below are pierced by five lights representing typical figures of Faith, Hope, Fortitude, Truth and Justice. The display of glass is, on the whole, effective, and the craftsmanship adequate. The figures are well seen, and a certain opalescence of effect characterises the glass, more suggestive of the restaurant than the requiem. The effect of the glass will be improved by introducing some colour and gilding on to the frieze and pilasters on the wall. One has to feel the lack of distinguishing characterisation in the figures themselves. The types are somehow commonplace and justify the feeling suggested by so much "decorative" art, that it lacks significance and reality. The figures of the "Virtues" would not severally identify themselves but for the labels, and owing to the lack of this grasp, the effect seems to falter and is unsatisfactory. The artistry is all too certain and easy. We can imagine something a great deal better, which would yet be open to much more criticism. But this is "decorative art" at the present time; too confident of itself, without much searching of the spirit. And yet the poignant associations of such a memorial seem to us to call for something more, something that shall arrest us from our present life, and create some silence of thought in the beholder for the cause which placed it there. It will please those who like plenty of bright colour, and, because it challenges us to no new interpretations, asks so little of us, will be accepted rather than something better.

OLD DRAWINGS.

The variety of approach and method amongst artists is one of the enduring factors of interest for the student of art, and the exhibition of "Drawings, Old and New," at the Leicester Galleries, affords plenty of interest of this kind. Between the "Wood Nymph" of Burne-Jones and the "Girl Seated on a Bed," by Sir Wm. Orpen, or the nude study by Mr. Strang, what a wide gulf there is! Even between the fine drawings of "The Vraic Farmers," by Edmund Blampied, and the equally grave style of "Sheep Washing," by L'Hermitte, one finds the keen individual difference. A world of critical comment might be devoted to such an exhibition as this, but though we can only benefit from it according to our own capacity and breadth of sympathy, it is to be counted amongst the valuable educative influences which modern opportunity brings to us.

EGYPTIAN ANTIQUITIES.

The exhibition of relics of antiquity which come before us from time to time draws numbers of interested observers, who are thus being continually reminded of the long period during which the refinements of art have existed. Older papyrus records than any previously shown are now on view at University College, where is now open an exhibition of Egyptian antiquities found by Prof. Flinders Petrie and students at Abydos and Oxyrhynkhos, in 1922. The latter is 110 miles south of Cairo, and the great theatre there and the colonnade were examined and planned; this theatre had a stage 200 ft. in length. A great deal of the interest may be considered purely archæological, but a magnificent stone capital and running bands of ornament are amongst the architectural exhibits. Some of the carved ornament is almost identical with Romanesque, as our sketch shows. We also give a sketch of a beautiful old Roman bottle.

THE R.I.B.A. MEETING AT CARDIFF.

OWING to pressure on our space, a report of the banquet held at Cardiff during the recent R.I.B.A. conference in that city has been unavoidably held over.

The banquet was held at the Park Hotel on July 9, the President, MR. PAUL WATERHOUSE, presiding.

The loyal toasts having been submitted by the Chairman, the LORD MAYOR OF CARDIFF (MR. F. HAROLD TURNBULL, J.P.) proposed the toast of "The Royal Institute of British Architects and the South Wales Institute of Architects," and said it was an honour to have the conference of the R.I.B.A. in Cardiff. British architects had something for which to thank Cardiff. They ought to have a feeling of gratitude akin to that which citizens of Cardiff felt to the City councillors of twenty years ago, who decided to purchase Cathays Park. It was a policy of courage to decide to spend half-a-million, for that sum, twenty years ago, was something quite different from what it was to-day. To spend that and to reserve the land for the lay-out of public buildings was something for which they should all feel grateful. In that, Cardiff had given to the architectural profession an opportunity to show to the rest of the country what the ideal of public buildings should be. There was another reason why Cardiff should be encouraged by the Royal Institute of British Architects, and that was because they were doing what they could to encourage the profession. Those present probably knew that they had established a Department of Architecture and Civic Design at the Technical College. In that Department they had set up something which would train the architects of the future to make them in total agreement with what those present would expect. He thanked the Secretary of the South Wales Institute of Architects for the real assistance that body had given them in setting up that Department. Not only had it shown great willingness, but it had given great practical assistance in the establishment of the scheme. His (the speaker's) idea was that there were two sides to their profession. There was the artistic side, and there was also the scientific side. He believed that in the municipal buildings of Cardiff they had almost perfect examples of both sides of the architect's profession, as he understood it. They had, first of all, buildings which were beautiful in themselves, and he could say, from long experience of work as a municipal administrator, that not only were they beautiful to the eye but they admirably served the purpose for which they were designed. No little of the success which they had achieved in the administration of Cardiff was due to the beautiful surroundings from which they administrated the affairs of the city. The people of Cardiff were very grateful for what the architectural profession had done for them. Architecture was a really noble profession, and he believed that the work architects did promoted the health and happiness of the people, and nothing could be more noble than that.

MR. PAUL WATERHOUSE, in responding, said the Lord Mayor's reception of the members of the conference the previous evening, at which, unfortunately, he (Mr. Waterhouse) was prevented from being present owing to an accident which might happen to anyone—a client—was appreciated by all the members in a most cordial manner. Why were they holding a conference at Cardiff? The answer was in the toast to which he was responding, and in the Royal Institute of British Architects, and the South Wales Institute of Architects. Above all things they stood for that desire on the part of architects to meet together to foster that fellowship amongst fellow craftsmen, without which craft could not exist. They, in London, who represented the Institute looked upon Cardiff as a very bright spot in the representation of those sentiments for which the Royal Institute of British Architects stood. What were those sentiments and objects? First, the elevation of architecture. Cardiff, as a city, had done its share in the elevation of the art of the architect. Those who helped to manage the Institute looked upon Cardiff as a pioneer city in the promotion of modern architecture in an exceptionally beautiful lay-out. Another object was the protection of the architect. Many people thought that the protection of the interests of the architect was their sole object, and that from the monetary point of view, but they protected the architect in many ways besides the protection of the pocket. Then there was the educational side, the promotion of a successful future for architecture. There, too, Cardiff had been in the van. Starting much later than some rivals, she had, none the less, made great progress, and they could congratulate her on the capture of Mr. Purchon. Then there was the honour of the architect, which was not to be protected at the point of the sword like some eighteenth-century gentleman's honour but was to be protected in other ways. They hoped that the Institute helped in the promotion and protection of the honour of architects as professional men. Last, but by no means least, there was the question of brotherhood. Those of them who lived in London regarded the co-operation of others living in the other metropolitan cities as valuable. Long ago they lost the idea that London was the only centre they knew. The Royal Institute's activities were spreading not only over the whole of the British Isles but also over the whole of the British world, and every centre within it was a centre from which an effort was made to keep up the brotherhood and prestige of the profession. There was the enlargement of life which they all hoped to promote, and without which he did not see how architecture could succeed. They could not make an architect out of a pessimist. What was an architect? He was a man who, with a load of bricks, was expected to make a house. If an architect were asked what he laid his bricks with he would reply "Hope." He had nearly got to the end of his first year of office, and he would plunge into the second full of hope for the future of the Institute. Friendship and enthusiasm were the great things—they were infectious. If they would make it their business to infect their friends with enthusiasm, and then enthusiasms with friendships, he was sure they would go far.

MR. PERCY THOMAS, O.B.E., also responding, said he was glad to do so because it gave him an opportunity of thanking them on behalf of the South Wales Institute of Architects for the help they had given in making that conference a success. The far-reaching effects of their visit would be of inestimable value to the South Wales Institute of Architects. Although they in Cardiff were proud of their city, and expected visitors to praise their civic centre and fine buildings, it was just as well on occasions like that to be honest, and there was no doubt that, in spite of that wonderful centre, public interest in architectural matters was nothing like what the visitor would expect. The number of public men in Cardiff interested in architecture was remarkably small, and if that visit stimulated interest in matters architectural, then it would have been a great success. He could not help but feel that the profession in South Wales was responsible for that to some extent. The standard in the past had not been very high. It was not many years ago since the mention of South Wales in architectural circles in London produced pretty much the same effect as the mention of Wigan by a music hall comedian produced to-day; but things had altered since then. At any rate, they in South Wales had done their part in the propaganda work during recent years. There had been a slow but sure awakening of public interest in public buildings, in town-planning, and so forth. In 1912 the South Wales Institute numbered, members and students, 61 in all, but to-day its membership was over 200, and it was the fourth largest of the allied societies. There was an infant school of architecture in Cardiff, which was in very capable hands, and they had no doubt that the effect would be seen in years to come.

MAJOR HARRY BARNES, M.P., in proposing the toast of "Our Guests," said he felt Cardiff architects were very fortunate in having at the head of the civic body of their city one of such fine distinctions as the Lord Mayor had proved himself that night. Architects had often suffered because great schemes of construction came before them, and sometimes they thought what was wanted was an engineer, sometimes a surveyor, but what architects desired to see at the head of every civic body was a man who was capable of seeing that what was wanted was an architect. He associated with the toast the name of Mr. J. C. Gould, M.P., and Dr. W. Evans Hoyle, M.A., Director of the National Museum of Wales. Mr. Gould's name was associated with the toast because he was the representative of one of the great patron classes of architecture. Great architecture was only possible under two conditions: one was that there should be a great moving idea, and the second was that architects should have the control of other people's money. It was to the merchant princes of the past that architecture owed so much. One could not think of the northern Italian cities, of the cities of the Hanseatic League, and, indeed, of our English cities, without seeing how much they owed to those merchant princes of the past. Nothing could be better done by merchant princes than to leave behind them in their cities great memorials of their prosperity.

MR. J. C. GOULD, M.P., in responding to the toast, said one of the greatest difficulties they had to contend with was the relationship which existed between workmen and those desirous of extending their operations. He was sorry to see that the day had gone when a man put down his thousand bricks a day and never broke his back. Restrictions had been superimposed, and men to-day were working against time for money and wages. It was necessary to return to normal conditions, because the results of those things fell back upon the people who occupied the houses. What was wanted was a little more human understanding between the workman and the employer and the civic authorities.

DR. W. EVANS HOYLE also responded.

GLASGOW HOUSING EXHIBITION.

ARRANGEMENTS have been completed for the Glasgow Corporation's fourth Housing and Health Exhibition which will be held in the Kelvin Hall during the three weeks commencing October 2 next. The Corporation is making great efforts to encourage the display of the latest improvements in the building of the home under up-to-date and hygienic conditions, and additional features have been introduced which will, it is claimed, make the show most attractive. The classification of exhibits has been extended so as to include building materials of all classes—reinforced concrete brickwork, concrete slabs and blocks, asphalts, asbestos slabs, tiles, marbles and mosaics, casements, cements, chimney pots, cowls, &c., roofing materials, doors, door fittings and window fittings, flooring of all kinds, glazing of all kinds, timbers of all kinds, art metalwork, mouldings, plaster, chimney pieces (metal and wooden), stone, &c.

The furnishings, lighting, heating, labour-saving and cleansing appliances section includes furniture, carpets, linoleums, felt and other floor coverings, kitchen and cooking utensils, brushes and cleansing materials, disinfectants, electric and hand sweepers, electric and gas irons, gas and electric cookers, heaters, boilers, and geysers, gas and electric radiators and fires, electric and gas fittings, globes and shades and gas mantles. Sanitary appliances will include baths and bath fittings, sanitary pipes and drainage fittings, and sanitary specialities of every description. The decoration section comprises paints, oils, varnishes, distempers, wallpapers, enamels and wallhangings.

THE LONDON SOCIETY.

Dinner to the London County Council.

AT the Hotel Victoria, Charing Cross, on Thursday last week, the London Society entertained to dinner the officers and some members of the London County Council. The chair was occupied by the Rt. Hon. Earl Crawford, and the guests and members present included Mr. F. R. Anderton (Chairman of the London County Council), Miss Adler (Deputy Chairman, L.C.C.), Mr. H. C. Gooch (Vice-Chairman, L.C.C.), Sir James Bird (Clerk to the L.C.C.), Sir Melvill Beachcroft, Sir Arthur Holbrook, Sir Aston Webb, P.R.A., and Lady Webb, Sir William Wayland, Mr. Harold H. D. Anderson, Mr. W. R. Davidge, Mr. C. Lewis Hind, Mr. Ralph Knott, Mr. H. J. Leaning, Mr. Henry Lovegrove, Mr. W. J. H. Leverton, Mr. R. W. Granville Smith, Mr. Carmichael Thomas, and Mr. Percy Tubbs.

In proposing the toast of the London County Council, Earl Crawford expressed the great honour the members of the London Society felt in the presence of the Chairman and other officers of the London County Council that evening. The Society fully realised the responsibility of the work of the Council, and also understood the difficulties and obstacles and hindrances which must always confront a government which was a greater government than that of a dozen European countries.

MR. F. R. ANDERTON, in responding, first expressed the gratification with which he and the other representatives of the L.C.C. who were present had accepted the invitation to dine with such an influential body as the London Society, whose objects were to foster a wide concern for the beauty of the capital of the Empire, for the preservation of its old charms, and for the careful consideration of its new developments—all most excellent objects. The speaker then dealt with a few of the problems which are exercising the minds of those who have the amenities of London at heart. With regard to the new County Hall, he said he had heard nothing but emphatic praise for that building, which would be a great addition, both architecturally and æsthetically, to the landmarks of the Metropolis. Turning to the Mall improvement scheme, he said that was one of the improvements all Londoners desired to see carried out, but the furthering of that scheme had been delayed owing to the restrictions on capital expenditure; he was glad to be able to say, however, that the money for certain improvements in that direction was included in the L.C.C. accounts for this year. On the question of the proposed Charing Cross Bridge, he could only say that capital expenditure was again the chief stumbling block, and such a gigantic improvement would undoubtedly have to wait some considerable time. In reference to illuminated signs, he was afraid the powers of the L.C.C. were somewhat restricted in that connection, but any representations the London Society might care to make with a view to reducing the glare of signs would receive sympathetic attention. The last subject touched on was the river as a highway; and on that subject he was bound to say that any expectations of the Council restarting a service of steamboats on the Thames would be disappointed. In conclusion, he said the members of the London Society might be called dreamers of dreams and seers of visions, and he hoped they would long continue to be so, but the practical side of all great improvement schemes had to be considered, and with the proposed Charing Cross Bridge, as with other schemes, they were pulled up sharp by the question of finance. The necessities of London must be dealt with first, but in all its work the L.C.C. would always consider the artistic side of the question, and not allow anything to be done which would be a æsthetic offence to the population.

MISS ADLER also responded, and said the members of the L.C.C. were all equally keen about preserving the beautiful monuments in London, and appreciated the work being done by the London Society. She gave some statistics showing the great improvement in the health of the children of London since 1913. In regard to housing, she was glad to record that the work begun by Sir Melvill Beachcroft was being carried on, and that the Council's schemes would house something like 32,000 additional people. There was a great desire on the part of the Council to improve the slum areas, and to know that they had the support of the London Society in their efforts was a great encouragement.

In response to the invitation of the Chairman, SIR ASTON WEBB, P.R.A., also addressed the gathering. Referring to Mr. Anderton's remarks, he said dreamers of dreams should not be despised. He himself saw visions of what might have been done in London during the past 30 or 40 years, and he had seen terrible mistakes made. The London Society looked to the young men—the dreamers—to dream what London ought to be, and to see their dreams were realised. At the moment, Charing Cross Bridge could not be built, but the carrying out of anything which would interfere with that great improvement in the future should be prevented. The London Society was confident that some day that terrible blot on the Thames at Charing Cross would be removed, and that the erection of a beautiful bridge for rail and road traffic would be possible, and trusted that the L.C.C. would not allow anything to be done which might prevent it. He thought the illuminated signs were horrible and a disgrace to London, and the London Society was very anxious that that nuisance should be mitigated. The slum problem was, he thought, the most difficult of all London problems. At one end of his own borough there were slums in which men lived like beasts, and in which children lived in a way which was a disgrace to the whole community. He was told that if those people were removed to Park-lane that street would in a short time become as bad as the place from which the people were taken; but could not something be done to educate the poorer people into a better way of living?

THE WEEK IN PARLIAMENT.

WESTMINSTER, *Wednesday.*

Rent Restriction Act.

Sir W. de Frece asked the Minister of Health if he would consider the desirability of calling a conference representative of both landlords and tenants to consider an agreed policy at the expiration of the Rent Restriction Act, it being understood that the Government would give such policy the force of law.

Sir A. Mond said he was afraid that it would be difficult to convene such a conference, and that, even if it were convened, it would not be likely to arrive at any agreement, but if his hon. friend could make any suggestions for arriving at the desired result he would be happy to consider them.

Replying to Sir E. Collins, Mr. Munro, Secretary for Scotland, said that no decision had yet been reached as to whether the Rent Restriction Act would be continued.

Mr. John asked the Minister of Health whether he was aware that the change in economic conditions which had come about since the percentage increase of rent was fixed under the Rent Restriction Act had greatly increased the financial difficulties of the middle and working classes; and whether he would immediately introduce legislation for the purpose of materially reducing the percentage by which rents could be increased over those of pre-war.

Sir A. Mond said that he would consider the point, but he could not give any undertaking as to the introduction of legislation.

Loans to Local Authorities.

Mr. Thomson asked the Minister of Health whether, in view of the fall in the Bank rate, he would favourably consider making loans to local authorities at a rate of interest not exceeding 3½ per cent., repayable over 60 years, to enable them without further State assistance to erect houses in those districts where serious overcrowding still continued and where there were large numbers in the building trades out of work.

Sir A. Mond said that the terms on which the Local Loans Fund could lend depended on the price at which Local Loans Stock could be issued, which was only indirectly affected by changes in the Bank rate. The hon. member's proposal would involve a new Government subsidy for housing.

Water for Building.

Captain W. Benn asked whether under the Colne Valley Water Act any preferential arrangement as to the supply of water had been given to members of the National Federation of Building Trades' Employers and the London Master Builders' and Allied Industries' Association.

Sir A. Mond said that there was no preferential treatment given under the Colne Valley Water Bill to the associations mentioned. He was informed that during the passage of the Bill through Parliament the promoters came to an arrangement with these associations, who had petitioned against the Bill, for the supply of water for building purposes to which they would not otherwise be entitled; but the company did not themselves come under any obligation to give a supply to members of the associations on any better terms than to anybody else.

Price of Land.

In reply to Mr. T. Thomson, Sir A. Mond said that the average price per acre paid for land purchased by local authorities for purposes of the State Assisted Scheme was for county boroughs £215, for other boroughs and urban districts £204, and for rural districts £128.

Dwelling-houses Built.

Sir A. Mond further informed Mr. T. Thomson that the following table showed approximately the average increase in the total number of existing dwelling-houses of all kinds for England and Wales (so far as figures were available) and for Great Britain.

Quinquennial Periods.	England and Wales.	Great Britain.
Increase during:		
1875–1879	Figures not available.	492,079
1880–1884		421,420
1885–1889		356,771
1890–1894		324,409
1895–1899	504,788	575,672
1900–1904	581,848	654,611
1905–1909	513,529	541,131
1910–1914	303,238	328,320

Inhabited House Duty.

Sir A. Mond informed Mr. T. Thomson that the following figures obtained from the annual report of the Inland Revenue Commissioners relating to Inhabited House Duty showed the total number of dwelling-houses of under £20 and of £20 and over annual value in Great Britain for the year 1900–15. As the duty did not extend to Ireland, complete figures were not available for the whole of the United Kingdom.

Year.	Number of dwellings exempt from I.H.D., *i.e.*, under £20 annual value. (The figures in this column included all premises used as dwellings.)	Private dwelling-houses charged to I.H.D., *i.e.*, of £20 and over annual value*
1900–01	5,613,228	1,187,758
1901–02	5,703,643	1,231,086
1902–03	5,791,987	1,264,602
1903–04	5,833,536	1,350,399
1904–05	5,934,741	1,381,625
1905–06	6,047,579	1,414,383
1906–07	6,128,050	1,446,481
1907–08	6,208,000	1,467,557
1908–09	6,281,260	1,491,773
1909–10	6,368,441	1,507,056
1910–11	6,379,092	1,532,562
1911–12	6,459,257	1,544,932
1912–13	6,505,507	1,558,711
1913–14	6,548,648	1,574,250
1914–15	Figures not available.	1,592,117

* The figures in this column excluded shops, &c., used as dwelling houses.

THE INSTITUTION OF MUNICIPAL AND COUNTY ENGINEERS.

ANNUAL CONFERENCE.

THE forty-ninth annual general meeting and conference of the Institution of Municipal and County Engineers was opened at the City Hall, Cardiff, recently, when nearly four hundred delegates were in attendance.

The annual general meeting was held first, over which the outgoing President, MR. NORMAN SCORGIE, M.Inst.C.E. (Borough Engineer and Surveyor of Hackney) presided. The annual report and accounts for the year ended April 30 were passed, and other business of a formal nature disposed of, after which the President announced the award of premiums for papers submitted during the past year to the following: 1st (value £5 5s.): Mr. A. E. Jackson (Borough Engineer, Southport)—Paper, "Some recent municipal works in Southport"; 2nd (value £4 4s.): Mr. W. H. Eley (Surveyor to the Newmarket U.D.C.)—Paper, "Results of a housing scheme by direct labour"; 3rd (value £3 3s.): Mr. T. Peirson Frank (Borough Engineer, Plymouth), for a paper on "Post-war works at Plymouth," and Mr. E. J. Goodacre (Assistant Borough Engineer, Hastings), for a paper on "Economy applied to municipal engineering."

Civic Reception.

The LORD MAYOR OF CARDIFF (COUNCILLOR F. H. TURNBULL, J.P.) was present at the opening of the conference, and gave a warm welcome to the delegates. He referred to the fact that it was 23 years since the Institution had held a conference at Cardiff, and the members would, he felt sure, see a great change in the city since then. It was an honour to Cardiff that the City Engineer (Mr. E. J. Elford) was their President-elect, and he could testify to the great work which Mr. Elford had done since coming to Cardiff in 1913.

The retiring President, having returned thanks, invested Mr. Elford, the new President, with the chain of office, and on the motion of MR. E. WILLIS (Chiswick), seconded by MR. J. DRYLAND (Middlesex), Mr. Scorgie was thanked for his services.

Presidential Address.

MR. ELFORD then delivered his presidential address, in the course of which, in speaking of town planning, he said it was seldom realised that a town was more or less a business concern, and for that reason alone its lay-out, organisation and equipment should have at least as much care and consideration as that of the most important and efficient business undertaking. But it was very much more than a business. To a large proportion of the population it was the centre of all life and interest from the cradle to the grave. It should, therefore, be made worth living in, and everything possible should be done by careful thought, intelligent foresight, and wise planning to add to the joy of life, as well as to improve the conditions which made for material prosperity. It was the aim of town planning to meet the diverse needs of each class of the community without injury or annoyance to either, and generally to promote the health, comfort, convenience, and well-being of the community.

Roads and Town Planning.

After luncheon, SIR HENRY P. MAYBURY, K.C.M.G., C.B. (Ministry of Transport), delivered an address in which he dealt with the question of housing in relationship to town planning and the construction of roads. He said under the standard specification usually adopted unnecessary expense was often enforced, particularly as regarded streets in purely residential districts. Greater discretion and elasticity were required, because if more money than was necessary was expended in the construction of residential roads and streets the effect must be to retard development, to discencourage building, and to prolong still further the existence of slum dwellings. The subject was well worthy of the consideration of the Council of the Institution, and he could promise them the cordial co-operation and assistance of the officers of the Housing Department of the Ministry of Health and of his own department.

MR. J. G. GIBBON, C.B.E. (Assistant Secretary of the Ministry of Health), also gave an address dealing mainly with the question of town-planning. He prefaced his remarks with a reference to the charges now placed upon owners of property in respect of street construction, and pointed out the importance of doing all that was reasonably possible to expedite the return of private enterprise to the building of houses. In the cost of house building, the charges in respect of streets were no small item, and though it might be that the present somewhat confused position regarding street charges could not be adequately remedied without fresh legislation, there were a number of administrative measures which should be considered. One was the question of whether too high a standard of construction was sometimes being required, with consequent unwarrantable high charges on the frontagers, and also that regarding the width of roads. There was also the complaint made that the developing owner had generally no information as to what standard of construction the local authority required, and was therefore left in the dark with an uncertain liability hanging over his head. A number of questions were being considered by the Ministry, and he could assure the Institution that it would be very helpful indeed if that body would set on foot an inquiry through a small committee which could work in co-operation with the investigations which the Ministry was making. He would urge the fullest publicity in connection with town planning, and that business men be brought to realise how much good there was for them in it. The Ministry had greatly simplified town-planning procedure by preparing a set of model clauses, which should reduce enormously the work of local authorities in preparing schemes. One of the criticisms levelled at town-planning in the past was that it hindered development and sterilised land, and with the idea of ensuring that it did not do so the Ministry was about to issue a general order under which the authorities which had town-planning schemes in preparation would be authorised to allow development to proceed, subject to such requirements as the Council might impose.

MR. SCORGIE moved a vote of thanks to the speakers, which was carried with acclamation.

Town-Planning.

MR. H. H. HUMPHRIES, M.Inst.C.E. (City Engineer, Birmingham), read a paper on "Town-Planning and Re-Planning in Great Britain." After some remarks on the broader aspects of the subject, he referred to the town-planning schemes of the Birmingham Corporation. In the Birmingham schemes, particularly in the later ones, he said efforts had been made to avoid overloading them with too much detailed development, for, on consideration, it was evident that as regarded development outside the actual main lines of the scheme the less shown upon the plan the better, provided that full control of all development was covered by the scheme itself. The possibility of certain main lines of development being laid down so as to be practicable for all time was a reasonable one, but it was difficult to settle final development beyond that point. It was, therefore, better to leave other details in a somewhat fluid condition, it being understood that to assist in their future consideration tentative schemes would be always available. It was extraordinary how very quickly ideas included in town planning schemes might have to be superseded owing to conditions altering. For instance, in a recent case, almost before the then supposed final plan was completed, an entire change in one of its great main features had to be made owing to a development proposal being unexpectedly brought forward.

Of the streets included in the original South Birmingham draft scheme, 176 were to be constructed entirely at the cost of the Corporation. The construction of the remainder was vested in the Corporation, at its discretion (subject to appeal in case of undue delay), and although it had to provide the money to cover the initial cost, subsequently the adjoining landowner deriving benefit from the complete construction of the road was required to contribute towards it an amount not exceeding £3 10s. per yd. of frontage, but not until his property was actually developed. It was evident that, under the changed circumstances brought about by the war, which increased all costs, the Corporation would be involved in heavy financial obligations at inopportune times. It was obvious that contributions from owners would be out of proportion to what the actual development costs would amount to. A new principle was, therefore, adopted under which the new streets, 33 in number, would be made at the joint cost of the Corporation and the owners of the frontages, and the owners' contributions would amount to a sum equivalent to the cost of making a street of full by-law width (at present 50 ft.) of regulation construction. Forty-three streets are to be widened for extra public purposes. They were of sufficient width and construction for ordinary services, and as it could not be reasonably held that the frontagers would receive any financial advantage from the improvements (their properties being more or less developed) the entire cost was to be borne by the Corporation. As to the remaining 88 streets to be widened, the cost would be paid for jointly by the Corporation and the owners, the latter contributing a sum equal to the estimated cost of a street of full by-law width, less the proportion of the cost attributable to the area of highway before widening. In connection with the last-mentioned types of road works, the owners of frontages forming the site of or curtilages to buildings existing at the date of the authority to prepare a scheme would not be required to contribute towards the cost, as it was presumed that in the great majority of cases no financial benefit would be derived from the works. This exemption did not apply to buildings erected after that date.

MR. THOMAS ADAMS (Town-Planning Adviser to the Commission of Conservation, Canada) read a paper entitled "Town-Planning in Other Countries," in the course of which he dealt chiefly with the city and town-planning movement in North America, including the United States and Canada. Significant developments, he said, had taken place during the past few years in different parts of the Empire. North America had been the birthplace of many fine plans, which had had a high educational value, and if their success was judged by the effect they had had in making an appeal to the imagination of the citizens and in providing them with inspiration they had achieved an eminent degree of success. If, however, actual execution of a plan was to be regarded as the test of success, most American plans had been, to a large extent, failures.

L'Enfant's plan of Washington had been more or less followed since it was made in 1791. Departures from the original plan that had been made independently of, or in opposition to, expert advice proved to be mistaken.

Chicago had an ambitious plan prepared by Burnham and others in 1908, and since elaborated, at a total cost of £100,000. A great deal of reconstruction had been carried out on the lines laid down in that plan.

New York was carrying out what was, perhaps, the most successful zoning plan—having for its object the regulation of the use, height, and density of buildings—but it had no general development plan. While the citizens of some great cities, including a group in London, the greatest of them all, seemed to think healthy development of the city was to be accomplished

by applying cosmetics and removing surface defects from the face of the city, New York was making a thorough diagnosis of its physical condition in order to ascertain the facts necessary to enable it to prepare a scientific plan. An inquiry into the physical, economic, legal, social and general living conditions of a city must precede any attempt to prepare a proper plan; and those who conducted the inquiry must have expert knowledge of what they were aiming at, and ability not only to collect facts but to draw the true conclusions from them.

Plans have been initiated and carried out in part in St. Louis, Cleveland, Pittsburg, and other cities in the United States, and in Halifax, St. John, Ottawa, London, and other Canadian cities.

Over 50 cities had had comprehensive plans prepared in one form or another, and many illustrated reports had been published. Until 1913 the Chicago plan represented the high-water mark of modern city planning activity in America. That plan did not deal with the control of land development or zoning, but was really a great reconstruction scheme for re-modelling Chicago and for creating ambitious monumental features and elaborate water-front improvements. For some time that was, to Americans, the model of what a city plan should be. Then there was a reaction leading to a tendency to write down the value of costly re-planning schemes and to look to Germany and Britain for examples of what should be done. Movements in favour of zoning on the German model developed in some circles, while smaller groups favoured schemes for controlling and development and promoting garden cities in conformity with practice in Britain. Just before the war those movements were crystallising into form in different directions.

Two provinces in Canada passed Acts similar to the British Act of 1909. City Planning Commissions sprang up in many cities. Massachusetts made a beginning with a form of State law to promote town-planning and homestead development. Ottawa, the capital of Canada, had a plan prepared by a commission. Landscape architects vied with architects and a few engineers in cultivating the field of city planning. Beginning in 1910, a National City Planning Conference was held each year in the United States. In 1914 that Conference took the form of a great international meeting held in Toronto, Canada. Following that meeting there was increased activity in both countries, and the Canadian Government appointed a town-planning adviser. The war came, and did little harm to the growth of the movement till 1916, but from 1916 to 1920 there was retrogression rather than progress, because of the absorption in the war, in war and post-war housing schemes, and in dealing with financial problems created by the war.

During the war the United States Government promoted and financed the building of a series of model villages adjacent to shipyards and munition centres. Each village was designed by a group of three persons, comprising a town-planner, an engineer and an architect. Since the war there had been no Government housing in the United States.

In Canada, on the other hand, no attempt was made to carry out any Government housing during the war, but a national scheme was promoted to assist in the erection of dwellings after the armistice. That scheme consisted in the Dominion Government lending the sum of £5,000,000 at 5 per cent. interest to the provinces, to enable the latter to lend direct to the cities and towns for housing purposes. Only four simple conditions were attached to the loan of this money, but a series of recommendations was made as to the most desirable forms of construction of the dwellings and the methods of laying out estates to provide for the utmost practicable delegation of responsibility to the local governments. The method adopted, as was desired, encouraged rather than discouraged private enterprise, and helped to promote better methods of laying out sites. The question of restricting rents in North America had never gone beyond academic discussion, but New York had sought to encourage the erection of dwellings by exempting certain classes of building from local rates for a period of years. There was now a building boom going on in many cities in the United States and Canada. Rents were high, but the cost of building had never gone up over the pre-war rates in anything like the same proportion as in England. With neither coding nor interference with private enterprise, and in spite of combines, the erection of new houses was gradually overcoming the effects of war shortage.

He suggested that there could be no effective solution of the housing problem until the problem of town development had been first solved on the basis of comprehensive town-planning schemes. There would be less need to use public money for housing if land development were carried out on sound business principles, and more power and responsibility delegated to local authorities to regulate the planning and building growth within their areas by simple methods of procedure.

For the purpose of discussion these two papers were taken together.

MR. W. T. LANCASHIRE (Leeds) said one of the most important questions was the re-planning of built-up areas. In the West Riding of Yorkshire there were thousands of back-to-back houses of the oldest type, whilst in Leeds many factories were built in the slum areas, and these were bound to conflict with any scheme of town-planning. He thought local authorities ought soon to be endowed with the power of re-planning such areas, and preventing the building of other factories in those areas.

COUNCILLOR MARLOW REED (Middlesex) expressed the opinion that a town-planning scheme was of little use unless it were in a large area. There was the greatest difficulty in getting people to rid themselves of their parochial interests. He was strongly in favour of a comprehensive plan of regional town planning, which, he thought, must be a matter of legislation before long. The idea that town-planning sterilised land was wrong—it was uncertainty that sterilised property; if it were made clear what a particular area was to be used for, then the money would come in.

MR. W. H. MARSDEN (Bradford) said that in Bradford owners, almost without exception, were receiving town-planning very kindly indeed, and many of them had handed over land free of cost for the widening of streets, the only expense coming on the city being the street works as the district was advanced.

MR. H. H. HUMPHRIES, replying to the discussion, said although there was a lot of talk in America about town planning he thought in England they had done more actual town planning than the United States. He thought any communication road should not be less than 65 ft. wide. He was quite convinced that unless there was compulsory town planning it would never be a success. As to the question of transport, a great many people had come to the conclusion that the end of the tramways was in sight, an opinion which at one time he shared, but the sleeper tramway track had now given the tramways a new lease of life, and he thought they would see the sleeper track in use for a good many years to come.

A vote of thanks was accorded to Mr. Humphries and Mr. Adams for their papers, and a resolution was passed supporting the principle of regional planning and the re-planning of built-up areas, and suggesting that additional powers be conferred on local authorities for this purpose.

Cardiff Housing Schemes.

MR. B. PRICE DAVIES, in the course of a paper entitled "Cardiff Housing Schemes: Organisation and Realisation," said the two principal schemes were the Mynachdy scheme, comprising 804 houses practically completed, covering an area of 83 acres, and the Ely scheme, comprising 250 houses in various stages of erection and completion, the area being 450 acres, with sites for 4,000 houses. Their experiences had been somewhat varied in character. They had brick houses and concrete houses, sixty contracts running practically concurrently under eight different sets of conditions, a great deal of direct labour work, which included the making of six-and-half miles of roads and five miles of sewers, and the suspension of a contract for special construction houses with its ultimate re-organisation by direct labour. Difficult though the work had been, its problems had been interesting, and the period of housing had, on the whole, been a progressive one. They did not know what the future held for housing, but Cardiff still needed three thousand houses.

In outlining the organisation of the supplies of building materials, he said the form of Contract (D. 88) issued by the Ministry for housing contracts, arranged for a schedule of basic prices, and on a rising market that meant payment of all increases beyond such rates, and should the market fall, the recovery of all reductions. After much consideration it was decided that the only practicable course to follow, if great difficulties were to be avoided, and the Corporation was to secure material at the lowest cost, was to come to an arrangement for the purchase of practically the whole of the materials by the Corporation, and to issue them to the builders at the respective basic prices. It was realised that that would be an onerous and complicated undertaking, and one which was only justified by the very exceptional conditions then existing. There was a great shortage of materials, and in dealing with the direct labour scheme it was found that even materials such as galvanised wall-ties, so small and yet so essential, were often unobtainable without considerable delay. With such shortage of materials it was apparent that to leave a large number of contractors to enter the market in a competitive scramble must result in further inflation of prices at the expense of the local authority. The Corporation, in purchasing, would also have the advantage of a good credit and a long purse.

The Builders' Committee was consulted, and it was only after considerable demur that they consented to risk a change of custom. In consenting they required a clause in the contract form which would enable them to purchase if the Corporation delayed in making the necessary supplies and retarded their progress. That clause was never made use of, and during negotiations of twelve months later with regard to the Ely scheme, they acquiesced in a similar arrangement in preference to the alternative of buying their own materials direct. Subsequent events had fully justified the course adopted, and very large savings had been effected on the materials purchased and issued by the Corporation, the total cost of which had been nearly £300,000.

The quantities of materials required were drawn out, and inquiries sent broadcast. The use of a standard order was found to facilitate organisation and clerical work considerably. An approximate draft of an order was sent when asking for quotations for a line of materials —timber, for instance—and the first orders would be based upon it. When it became possible to see the materials in position, a close investigation was made to arrive at the most efficient and economical arrangement, and detailed particulars were taken. From these dimensions (necessary also for the squaring up of the contracts) the standard order proper would be made out, and copies sent to all contractors, as well as to the merchants concerned. The advantages of that system were numerous. The contractor requisitioned on the Corporation for, say, one set of carcassing timber for No. 1 type houses, one set being sufficient for one pair. In so doing, he saved the intricate labour and risk often involved in making out the order, and saved writing the order out in detail. The clerk requisitioned in a like manner on the timber merchants, again ignoring the detail, and that particular line of goods would be delivered to the contractor without the local authority having to handle it. There was also another advantage to the contractor; if he failed to make his sets sufficient, then he knew that a re-arrangement was necessary, for he was not paid for any timber used in excess of standard requirements. Lengths were also ordered with a minimum of waste for the contractor.

Cement, lime and other such materials were ordered as required. Expensive classes of goods, such as grates, baths and the like, were

stored in the depôt on the site. Whenever possible second handling was avoided, but some lines of goods which were exceptionally scarce had to be stored, and only issued when contractors were ready for using them. When the first firm of contractors commenced on the site, common bricks, galvanised ties, and damp-proof course were already available on the site. The monthly turnover was very large, and the fact that the clerical staff employed averaged only three in number indicated to some degree the efficiency of the system. A storekeeper and assistant were also employed.

In opening the discussion on Mr. Davies' paper, COUNCILLOR THORNTON (Chairman of the Town-Planning Sub-Committee, Birmingham), said they were now within a short distance of the expiration of the Housing Act of 1919, and whatever experience had been gained by certain municipalities should be applied for the benefit of the whole. There was no doubt that the Act had failed to achieve the object for which it was passed, namely, the solution of the housing problem. He thought they must come to the conclusion that the only solution to the housing question was the restoration of private enterprise, but to do that they had to re-establish confidence in housing. There must be one of two things: houses must be built at a price that people could pay, or they must be offered to the people at a price they were prepared to pay with the assistance of some State aid. The only solution seemed to be a form of Government subsidy which should be reduced from time to time until an economic level was reached. He thought municipalities should endeavour to find common ground on which they could approach the Ministry. They should do something after the present Act had expired to help on private enterprise, and to help people to buy their own houses.

The PRESIDENT said it seemed to him that what was called the failure of the Housing Act was not a failure of the Act, but was really the outcome of conditions which no one could control. They were faced with an enormous demand for houses and a most inadequate supply of labour and materials. That was the opportunity for everyone to exploit housing. He still felt that under the circumstances nothing else could have been done than what was done at that time, when people who were living under the most deplorable conditions were demanding houses. He felt pessimistic as to when private houses would be offered "to let," and was afraid that for some time to come there would have to be some sort of financial help either from the Government or local authorities to provide houses for those who were in need of them.

MR. DAVIES briefly replied to the discussion, and was afterwards thanked for his paper; the PRESIDENT stating that Mr. Davies had been the backbone of his staff in the housing department.

Other papers read at the conference, which concluded on Saturday last, were: "The Mechanical Equipment of a Municipal Works Depôt and Scavenging and Cleansing Departments," by Mr. F. Wilkinson, M.Inst.C.E. (Engineer and Surveyor, Willesden Urban District Council); "The Mechanical Equipment of a Highways Department," by Mr. A. Dryland, M.Inst.C.E. (County Engineer, Middlesex); "Mechanical Transport," by Mr. Thomas Molyneux, M.I.Mech.E. (Chief Mechanical Engineering Assistant, City Engineer's Department, Liverpool); "Electric Vehicles for Municipal Work," by Mr. R. B. Mitchell, M.I.E.E. (Electrical Engineer to the Glasgow Corporation); "Heavy Oil Fuel Lorries for Refuse Collection," by Mr. G. Bertram Hartfree, F.S.I. (Borough Surveyor and Engineer, Godalming); "The Mechanical Equipment of Waterworks," by G. R. Collinson, B.Sc., A.M.Inst.C.E. (Water Engineer, Swansea Corporation); "City of Cardiff Waterworks, Taff Fawr Section, Breconshire," by Mr. C. H. Priestley, M.Inst.C.E. (Waterworks Engineer and Engineer-in-Chief New Works).

During the meeting a number of visits were paid to places in the neighbourhood of interest from a professional point of view.

The proceedings also included an inspection of a collection of machinery used in municipal work, which were shown by the various manufacturers in running order, and afforded an excellent opportunity for those present to judge of the qualities of the exhibits, and to compare them one with another.

Obituary.

The death occurred on Saturday last, at Dulwich, of Mr. William Larkins Bernard, F.R.I.B.A., late of Bristol, at the age of 78 years.

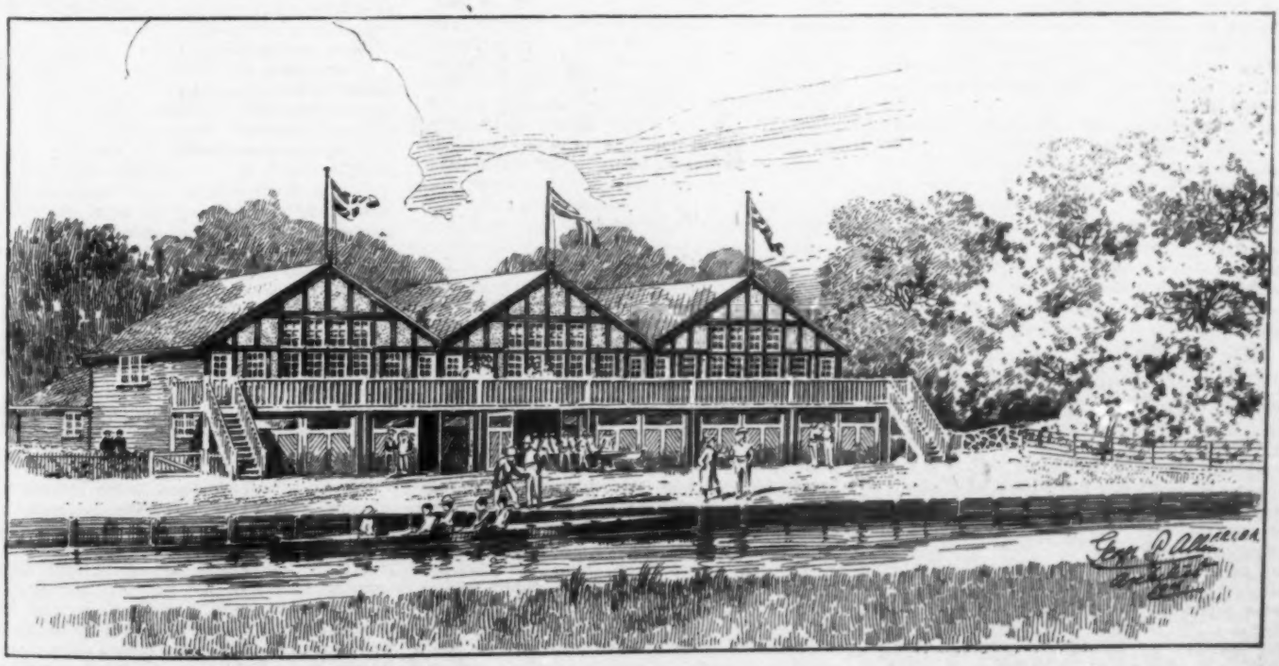
BOOKS.

Commercial Contracts. By E. J. PARRY, B.Sc. London: Pitman & Sons. 1922. 5s. net.

This book is intended to be a companion to the author's work, "Commercial Arbitrations," and aims at dealing with legal points and difficulties in contract of sale divested of legal technicalities beyond the man of commerce. Prefaced by a table of cases, chapter 1 deals with contracts historically, and the next two chapters with making a contract and contracts in writing, defining such things as "accepting" and "receiving" goods. Chapter 4 deals with the nature of evidence and what constitutes an agreement. A long chapter follows on conditions and warranties, the important distinction between which the author takes pains to explain. Next we are told the meaning of "acceptance" of goods. A special chapter is devoted to shipping contracts, and, finally, breach of contract is fully gone into, while the Sale of Goods Act is given as an appendix. In the 189 pages of this small volume those responsible for or interested in commercial contracts will find much to assist them, both in the adequate preparation of contracts and in dealing with difficulties which may arise during their administration.

"*The Practical Engineer Mechanical Pocket Book and Diary.*" London: The Technical Publishing Co. 1922. 2s. net.

This useful pocket book, in its 34th year of issue, appears to contain all the tabular and like data which a mechanical engineer could wish for. In its 600 pages will be found mathematical data, particulars of screws and metal sheets. There are lengthy sections on steam, steam engines and turbines, condensers, gas and oil engines, air and air compressors, hydraulic plant, machine tools and materials, power transmission, heating and lighting, while for the worker abroad many of the technicalities of his craft will be found in their foreign equivalents. Measuring about 5 in. by 3 in. by 1 in., this little book contains a great store of knowledge which should form a ready and acceptable reference work to all those engaged in the wide and complex field of this branch of engineering work.



Bedford Schools and Bedford Rowing Club Boat Houses. MR. GEORGE P. ALLEN, F.R.I.B.A., Architect.

[The Bedford Schools and Bedford Rowing Club Boat Houses were opened by the Rt. Hon. Lord Ampthill three weeks ago. The new buildings, which are timber-framed, face the River Ouse. The architect is Mr. George P. Allen, F.R.I.B.A., of 79, High-street, Bedford, and the contractors were Messrs. Corby & Son.]

WOMEN'S VILLAGE COUNCILS' FEDERATION.

THE annual conference of the Women's Village Councils' Federation for National Housing and Social Reform was held at 92, Victoria-street, S.W., recently.

Miss Gertrude Eaton, who presided at the morning session, said that this year they had had a set back in many ways, owing to the reactionary time through which the country had passed. It had suffered very heavily in the matter of housing and education. The value of life was very much greater than the value of economies, and although they would like to see economies in very many places it was their duty to bring the fact to the notice of those who had the framing of the laws that it was false economy to economise on housing and education, the two essential things in life. Conditions were extraordinarily bad in the towns and villages, and they would have to stand against the reaction and show that they meant to push for reforms in matters which stood in need of attention.

After the election of the new council and officers, a discussion took place on the "Problems of Village Life."

Miss Gray said 22 houses had been built in Aldridge (Staffs.), but more were needed. Street lighting had not been resumed since the war, and water had to be carried from a distance for washing. For drinking purposes there was none available except steam water from the engine house at the colliery, which was very injurious to health.

Miss Mantle said in Solihull (Warwickshire) the shortage of houses and the sanitary arrangements were appalling. Three or four families lived in each house, and the overcrowding was so great that children died. In nine of the houses, which were provided with only three lavatories, one hundred people lived, and yet no houses were being built.

Miss Constance Britton read a paper written by the wife of the District officer of Health, Ellesborough, Bucks., in which the writer pleaded for larger and healthier homes with better sanitary accommodation. Larger houses had been built, but the rents were too high, most of the men only earning thirty shillings a week.

Mrs. Savage (Walton-on-the-Hill, Surrey) said that housing conditions were very acute. They kept on agitating for more houses, and, although the negotiations had been going on for two or three years none was being built.

Miss Wilson (Rustington, Sussex) remarked that out of twelve houses promised only four had been built

At the afternoon session, the chair was taken by Lady Buckmaster, who said that other countries might be richer in beautiful scenery, but they were not so rich as this country in beautiful villages. She thought care should be taken not to build more houses than were needed, as, if building were done all over the country, there would be no country left. A careful censorship should be taken of unoccupied residences, most of which could be converted into excellent group cottages—four in one—as in Norway and Germany.

A paper was then read by Mr. F. M. Elgood, O.B.E. (Chairman, National Housing and Town Planning Council), on "Rural Housing To-day." The paper stated that the appeal issued by the W.V.C.F. pointed out that in rural districts conditions remained deplorably bad, with acute housing shortage and consequent evils of overcrowding, insufficient water supplies and lack of any standard of sanitation. No one who knew his England could doubt that this was not an overdrawn picture. Village housing had always been bad, and, in many places, there were slums in villages as bad as those in the towns. The cottages were often totally unfit for habitation, having low-pitched ceilings, and small windows in bedrooms quite near the floor. Those cottages were not only tolerated, but were admired. Buildings, which were obviously unfitted for their purpose, were often deemed beautiful, and that made for prejudice against their improvement on health lines. The decay of the countryside coincided with the rise of the industrial period, and, thereafter, agriculture in England receded into a secondary place and no longer provided the chief outlet for men's imagination, energies and money. The country became almost starved, wages fell or remained at a low standard, the population was attracted into the towns, the wheat-growing lands were laid down to pasture, with a consequent reduction in the requirements of labour. All those causes tended, not only to discourage any new building, but also to promote the gradual decay of existing homes. To-day, as for years past, there was no commercial inducement to build cottages in the country, and it was more than ever impossible to obtain such a return on capital invested as to afford the slightest expectation that, left alone, the supply would respond to the demand. A secondary reason was the difficulty of obtaining land. Although housing conditions had been recognised by the passing of various Housing and Public Health Acts from 1850 onwards, relatively little had been accomplished towards the improvement of housing the agricultural worker. Always inadequate, the position was rendered more acute by cottage after cottage falling into disrepair. Since 1909 it was the duty of the Rural District Councils to make inspections, ascertain the condition of all houses and make an annual report to the Ministry of Health. Shortage and bad conditions had been admitted over and over again by the councils, and reports to the Ministry abounded in evidence. The main features were insufficient and badly placed windows; want of ventilation; damp walls due to faulty, or absence of, spouting and no dampcourse; broken stone, or tiled and damp floors; bedrooms communicating; unpaved yards; ill-arranged privies; bad drainage; no water supply; added to which there was overcrowding, causing tuberculosis and even worse ills.

Local administration was not always blameless, as powers to compel repairs and improvements were not fully used. The medical officer hesitated to recommend the issue of closing orders, or demand repairs, lest the owners should prefer to close the houses, which at their worst were better than the street. In such cases, closing orders would be of doubtful benefit, unless accompanied by the building of new houses, as worse evils would ensue. Up to 1909 virtually no houses were built in rural areas, although up to the war many were erected and the progress was encouraging. Amongst other causes of failure to build were a conspiracy of silence about housing; the difficulty of obtaining a commercial rent; increase of rates; and fear of demand from all parishes. The conclusions of the committee in the Land Report were that there was need for more cottages with three bedrooms; many of the cottages were unfit for habitation; and that there was overcrowding. The bad conditions were responsible for rural depopulation; inefficiency resulting from loss of time in getting to work; prevention of marriages; and the spread of disease.

When the Housing Act of 1919 was passed and the scheme launched, it might fairly have been hoped that they were in a fair way to build the New Jerusalem of the Federation's hopes, Alas for the niggardly limit of three years' assistance, which had been the undoing of all good intentions. It was meant to be a temporary measure and was accepted as such, but only because it was hoped that more than the knife-edge would be taken off. But that pledge was withdrawn and they did not have even three years. Rural authorities were placed at a disadvantage; builders could not be found to go a distance from the towns; prices ruled higher in the country than in the towns; while rents would be obviously lower. When there was no direct opposition there was certain apathy; jealousy existed among the parishes; and there was opposition from farmers unless cottages were built on their own farms. All these difficulties were now being overcome, but it was necessary to-day to face the very serious position.

Mrs. Mary Higgs (Founder of "Beautiful Oldham"), in speaking on "National Health and Beauty," said that owing to the interest she and others had taken in the housing problem in Oldham a co-partnership garden suburb had been built, and the 198 houses which had been erected had saved them from the shortage. A shortage had now become imminent and the Council was building 200 more houses of a better type.

With regard to bad housing in rural areas, Miss Saward (Workers' Union) said that Oxfordshire and Essex were some of the worst counties, and that a very small percentage of the houses were provided with ovens or sinks.

A vote of thanks to the speakers and the chairman, proposed by Miss Constance Britton, was carried by acclamation.

AUCTIONEERS' & ESTATE AGENTS' INSTITUTE.

PROFESSIONAL REGISTRATION.

AT the annual meeting of the Kent, Surrey and Sussex Branch of the Auctioneers' and Estate Agents' Institute, held at Canterbury, Mr. J. George Head, a member of the Council of the Institute, made a statement in reference to the Landed Property Practitioners (Registration) Bill. He said that the principles of the Bill had been under discussion by the branches, and recommendations had reached the Joint Committee. As they knew, the Bill was being promoted with the assistance and co-operation of the Surveyors' Institution and the Land Agents' Society. Meetings had been held, and a draft Bill had been prepared by Parliamentary draughtsmen. It had been considered by the Joint Committee and brought to a form in which it could be submitted to the Councils of the various institutions. It had been submitted to those Councils, and various further suggestions had been made of a very valuable character, and they hoped that some of those recommendations would be inserted in the Bill, in order to make it more effective for the various purposes which they all so much desired. The Bill had to go back to the Joint Committee, and when finally settled it would be pushed forward and promoted as soon as possible. They were faced with very considerable difficulties in the presentation of the Bill. It would be as well to avoid sending forward anything in the nature of an alteration at a later stage. The Joint Committee had to approach the Councils of the three Institutions concerned. The Bill had been before the Council of each and was going forward. Any recommendations for alterations would mean having to go through that all over again. Of course, there was never any impossibility of making an alteration if it were one of the greatest importance, but unless it were something fundamental it would be extremely inconvenient, and might possibly result in the delay of a measure which they were all trying so hard to get through. It would have to be something that was very strongly pressed by the Branch and considered of importance by the Council to interpolate it at this stage.

International Theatre Exhibition.

Among recent additions to the International Theatre Exhibition, at the Victoria and Albert Museum, are two important models by Signor Mariano Fortuny. One of them is a very complete mechanical model of the canvas cupola invented by Fortuny for sky and lighting effects, and carried out by him in the Scala Theatre, Milan. The model shows how the canvas cupola can be folded up and moved to the back of the scene when other scenery is required in front. A second model, lighted by electricity, shows the effect of the cupola with a Venetian scene. Another addition is a large model of Drury-lane Theatre before the alterations made in 1921. This model was executed by Mr. J. H. Hollyman.

THE BUILDING TRADE.

REINFORCED CONCRETE BUILDINGS.

BY OSCAR FABER, O.B.E., D.Sc., A.M.Inst.C.E.

My attention has been directed by the Editor to a letter from Mr. A. E. Exeter on p. 828 of *The Builder* for June 2, entitled "White Elephants," and a reply by Mr. P. W. W. Pope under the same title on p. 937 of *The Builder* for June 23; also to a fresh letter received from Mr. A. E. Exeter, dated June 24, and has asked me to deal with Mr. Exeter's difficulties in the light of recent knowledge and experience of reinforced concrete buildings.

In spite of a careful examination of Mr. Exeter's letters, I find, with great regret, that while it is perfectly clear that he is very angry with reinforced concrete it is by no means so easy to discover what is the principal source of his annoyance. He refers to the "Jezreel's Tower" at Gillingham, and recalls the tales of firms who have broken themselves in attempts to break the Tower down. The exact relevance of this I, in common with Mr. Pope, have failed to discover, seeing that on the one hand the building is brick and on the other that it could at any time be demolished at a nominal cost if the owner were to desire it.

Mr. Exeter then informs us that he has been conjuring up visions of London becoming a city of derelict "Jezreel Towers" because of the introduction of reinforced concrete buildings. He gives us no reason for these visions, but goes on to say that owners of such buildings are laying by a heap of trouble, and asks who can bear the cost of demolishing and clearing such rubbish. He further states, "with reinforced concrete the cost of demolition will ruin the land it stands on." The only point which it is possible to discuss in this letter seems to me to be whether reinforced concrete is extraordinarily costly to demolish, and this I will deal with later.

Coming now to Mr. Exeter's fresh letter, it seems to me that he now changes his ground, and decries the use of reinforced concrete construction because "buildings should be works of art in which the handiwork and craftsmanship of the artisan should be displayed for the education and betterment of posterity." Mr. Exeter goes on to ask, "of what attraction would Hampton Court Palace be to this or any other generation if it had been built in reinforced concrete?" A little farther down Mr. Exeter states that the old General Post Office was as strong when demolished as the day it was finished, and that it was handed over to the housebreakers because it was obsolete, by which I presume he implies that had it been of reinforced concrete it would not have been so strong as the day it was finished. Mr. Exeter here raises the question as to the permanence of reinforced concrete buildings, which I will also deal with later. After this, he states that they are not proof against destruction by fire, and curiously enough mentions in this connection San Francisco when he states: "and those who built hopes on that will receive shocks as did the professors who prophesied that San Francisco would have no more earthquakes."

As a matter of fact, if the recent earthquakes and the very serious conflagration which followed it taught us one thing more than another it was how splendidly the reinforced concrete structures withstood the effect of intense fire on a colossal and probably unprecedented scale when steel-frame structures, which had been "fireproofed" by what was then the standard American method in use, *i.e.*, the use of hollow terra-cotta blocks round the stanchion girders, were utterly destroyed owing principally to the terra-cotta blocks and similar forms of fireproofing expanding and becoming detached from the steel which they were intended to protect. Mr. Exeter goes on to state that reinforced concrete structures are unsightly, uninteresting, and wasteful apologies for buildings. As regards their being wasteful, it is a fact on which there is abundant evidence that excellently designed and constructed reinforced concrete buildings are considerably cheaper per cubic foot than steel-frame structures or structures built under the 1894 Act, or brick or stone, except, of course, in the case of very small structures where the weights are so negligible that the strength of reinforced concrete is not utilised.

As regards the other two statements, that reinforced concrete buildings are unsightly and uninteresting, this depends entirely on the skill or otherwise of the architect. Surely it is utter nonsense to talk about buildings as uninteresting and unsightly in this general way. The building will be exactly what the architect makes of it, whether it be made of reinforced concrete, brick, stone, or any other material. If the architect is a creative artist, thoroughly conversant with the properties of his materials, he will be able to use each and all of them in such a way as to provide an harmonious and interesting result. A large number of interesting and beautiful structures could be mentioned in which reinforced concrete, properly designed and treated, forms the main structural material, and some of these will probably suggest themselves readily to most of your readers.

Reinforced concrete being a material of comparatively recent date, we have, of course, less experience in its skilful use for the purposes of architecture, and therefore it requires more brains to use it successfully than is the case with some other materials where perhaps there is more to copy and less to learn; but certainly no good will be done by this hysterical attitude towards it—rather does it call for greater study and greater co-operation between architects and engineers, and I think there is little doubt left in the minds of the more progressive creators that those who adopt Mr. Exeter's attitude in the matter are likely to be left sadly behind.

Coming now to the only other matters raised by Mr. Exeter which I have not already dwelt on—these are cost of demolition and permanence. With regard to the first of these, the cost of cutting out a concrete girder or stanchion with the aid of modern appliances is no greater than that of cutting out a brick pier or steel girder of the same size, and in this matter I speak with some experience. The concrete is cut away either with a hammer and chisel, in the case of small work, or with the use of pneumatic hammer in the case of large work, until the rods are exposed. These are then cut through with the oxy-acetylene flame, an operation which takes approximately three seconds per rod, after which a section of girder or stanchion of any width which can be conveniently handled is free to be removed.

As regards the permanence of reinforced concrete buildings, its resistance to fire has already been mentioned. If the concrete has been properly proportioned and executed with suitable materials there is no reduction of strength over very long periods of years, as a result of actual tests, nor is there any reason to suppose that there ever will be. As regards corrosion of the reinforcement, if the cover, materials, and design are good there is not the slightest reason to fear corrosion, except possibly in the case of structures exposed to sea-water or special conditions in industrial factories subject to strong acid fumes, etc.

From the second letter by Mr. A. E. Exeter, to which Dr. Faber refers, we take the following:—

"SIR,—Buildings should be works of art in which the handiwork and craftsmanship of the artisan should be displayed for the education and betterment of posterity. Of what attraction would Hampton Court Palace be to this or any other generation if it had been built in reinforced concrete? In reply to Mr. P. W. W. Pope, I quoted Jezreel's Tower as an example of work intended to outlast everything else, and realise it can be pulled down, but who can bear the cost? The Jezreel's teaches one lesson only—'Folly.' Fanatical religious sects will not convert London into a city of derelict 'temples,' but fanatical cement architects will cause to be erected buildings that will become useless and immovable from a financial point of view and uninstructing from an educational standpoint. Mr. Pope refers to the new General Post Office and obsolescence. Does he know that the old General Post Office was a splendid building, as strong as the day it was finished, and that it was handed over to housebreakers because it was obsolete (and had it been all concrete our letter postage would be 3d. now). Reinforced concrete buildings are not proof from destruction by fire, and those who build hopes on that will receive shocks as did the professors who prophesied that San Francisco would have no more earthquakes.

"Buildings standing strong and good are being handed over to the housebreaker every week in London simply because they are obsolete. Yet the works of art—even keystones—are preserved. And, I say, persist in erecting them and you leave nothing for future builders to admire but those examples lying in our museums of the lost arts to which our generation can add that of making roof 'plain tiles,' for which the introduction of slates is mainly responsible. So soon must follow the arts of brick-making and the selection of durable building stone, the secret of which cannot be preserved in book form but requires long years of practical experience to gain.

"I am not able to teach, but I am living to learn. A. E. EXETER."

WAGES ON PUBLIC WORKS.

THE Public Works Conciliation Board has decided that the present rate of wages on public works in the City and County of London be reduced to the following as from the first pay-day following the end of June. The reduction does not apply to districts in which labourers are paid less than 1s. 3d. an hour, and is to be effective for the three months July, August, and September, 1922:—Labourer, 1s. 4d.; blacksmith, 1s. 8½d.; concrete leveller, 1s. 4d.; duct or earthenware drain layer, 1s. 5d.; fitter, 1s. 8½d.; granite mason (kerb, &c.), 1s. 9½d.; granite sett dresser, 1s. 8½d.; jointer, 1s. 5d.; kerb fixer, 1s. 8½d.; pavior, 1s. 8½d.; platelayer, 1s. 5d. to 1s. 6d.; platelayer's labourer, 1s. 4d.; pneumatic pick operator, 1s. 5d.; rammerman, 1s. 5d.; scaffolder, 1s. 7d.; screeder, 1s. 5d.; steamroller driver, 1s. 8d.; street mason and flag dresser, 1s. 8½d.; tarpot man, 1s. 4d.; timberman, 1s. 5d.; wood block layer, 1s. 5d.; watchman, 8s. 6d. minimum day or night. The rate for boys is: between 14 and 16 years, one-third of labourer's rate; 16 to 18, half of labourer's rate; 18 to 20, two-thirds of labourer's rate.

COMPARISON OF PRICES OF BUILDING MATERIALS IN JANUARY, 1922, WITH CURRENT PRICES.

THE following table has been compiled to show the prices of the principal materials used for building purposes as compared with the prices at the beginning of January, 1922 :—

Material.	Jan., 1922. £ s. d.	July, 1922. £ s. d.	Fall. per cent.	Rise. per cent.
Bricks—				
Best Stocks	4 13 0	4 2 0	11.83	—
Flettons	3 12 0	3 1 0	15.28	—
Glazed	26 0 0	24 0 0	7.69	—
Thames Ballast	0 14 0	0 13 6	3.57	—
Thames Sand	0 19 0	0 16 6	13.16	—
Shingle (¾ in.)	0 19 0	0 14 6	23.68	—
Portland Cement	3 17 6	3 3 0	18.71	—
Ground Blue Lias Lime	2 12 0	2 5 6	12.50	—
Grey Stone Lime	3 5 0	3 1 0	6.15	—
Bath Stone	0 3 2¾	0 3 1	4.52	—
Portland Stone	0 4 11½	0 4 7	7.56	—
Good Sound Building Timber—				
4 in. × 11 in.	36 0 0	36 0 0	—	—
3 in. × 7 in.	25 0 0	25 0 0	—	—
3 in. × 11 in.	34 0 0	35 0 0	—	2.94
2 in. × 11 in.	32 0 0	35 0 0	—	9.38
2 in. × 7 in.	23 0 0	22 10 0	2.17	—
3 in. × 4 in.	20 10 0	20 10 0	—	—
Slates—				
24 in. × 12 in.	46 10 0	46 10 0	—	—
22 in. × 12 in.	42 5 0	42 5 0	—	—
R. S. Joists	14 10 0	14 0 0	6.66	—
Iron—				
Common Bars	15 0 0	13 0 0	13.33	—
Mild Steel Bars	13 10 0	12 0 0	11.11	—
Steel Bars	13 10 0	12 0 0	11.11	—
Cut Nails	26 0 0	23 0 0	11.54	—
Sheet Lead	36 0 0	36 0 0	—	—
Glass—				
15 oz. Sheet	0 0 4¼	0 0 3¼	23.53	—
21 oz. Sheet	0 0 6¼	0 0 5¼	16.00	—
26 oz. Sheet	0 0 7¼	0 0 6¼	13.79	—
Raw Linseed Oil	0 3 2	0 4 4	—	36.84
Turpentine	0 6 1	0 9 10	—	61.64
Ground English White Lead	58 0 0	54 15 0	5.60	—
White Lead Paint	77 5 0	75 5 0	2.59	—
Red Lead	41 0 0	38 0 0	7.32	—

A CANCELLED CONTRACT.

In the Court of Appeal recently an appea in the case of Tredegars, Ltd., Hammersmith, v. Distillery Co., Ltd., was heard before Lords Justices Bankes, Scrutton and Atkins, the defendants appealing from the judgment of Mr. Justice Sankey. The plaintiffs brought the action to recover £154 loss of profit in the following circumstances:—In December, 1919, the defendants decided to erect a grain store to adjoin their existing grain drying room, and got their architect to prepare a sketch plan of the proposed building, and then the defendants got into communication with the plaintiffs, who are builders and contractors, and who entered into a contract to build the store for £1,554. Owing to objections made by the district surveyor the building could not be erected and the objections necessitated a revision of the plans. At defendants' request plaintiffs were instructed to submit another drawing calculated to meet the proposals and requirements of the local authority. It was pointed out that the cost would be increased by £727 if the district surveyor's suggestions were embodied in the substituted plans. After the second drawing had been prepared and submitted the defendants cancelled the contract, and the plaintiffs brought the present action to recover the amount stated.

The defence was that the original contract was cancelled by mutual consent, and that it was an implied term of the contract that neither party should be bound, should it be found impossible to construct the building in accordance with the specifications. Mr. Justice Sankey held that the plaintiffs were entitled to assume that the consent of the local authority had been secured, and that the plaintiffs were entitled to recover. He accordingly entered judgment in favour of the plaintiffs with costs, and from this decision the defendants now appealed.

At the conclusion of the address of Mr. Heber Hart, K.C., on behalf of the appellants, and without calling upon Mr. Disturnal, K.C., on behalf of the respondents, their lordships dismissed the appeal with costs, holding that there was no mutual rescission of the original contract or that the plaintiffs repudiated it. The judgment of Mr. Justice Sankey was therefore affirmed.

Builder's Estate.

Mr. Edward Lawrence Marr, Liverpool, builder and contractor, who died in March, aged 58, left estate value, £24,795.

N.W. Federation of Building Trade Employers.

Mr. Firth Winterbottom, of Oldham, was elected president of the North-western Federation of Building Trade Employers, at the annual meeting of the Federation, held recently, at the Town Hall, Oldham.

NEW BUILDINGS IN LONDON.

STRAND.—With regard to the new super-cinema to be erected on the Tivoli site in the Strand, referred to in our last issue, many new features will be embodied. The building, which will cost £100,000, will contain, besides an Empire-style cinema hall (seating 2,800 people), a luncheon and American bar and baths. Mr. Bertie Crewe, Shaftesbury-avenue, and Messrs. Gunton & Gunton, Blomfield-street, are the architects.

EAST CENTRAL.—Messrs. Greenham & Co. have just commenced the demolition of the premises of the Bank of Australia, Ltd., Threadneedle-street. Messrs. Trollope & Colls are the main contractors, but we understand that no sub-contracts have been let.

BISHOPSGATE.—Mr. B. Goodman, house-breaker, is demolishing premises on a site in Bishopsgate, on which will be erected a branch of Barclays Bank. No contracts, we understand, have been let.

EAST CENTRAL.—The rebuilding of Nos. 6–11, St. Helen's-place is now in progress for the Great Northern Telegraph Co., Ltd., a Danish firm. The original premises were the old Chambers of the Leathersellers' Company, who are the ground landlords. The site, which backs on to St. Helen's Church, has a frontage of 150ft. to St. Helen's-place, and an average depth of 65 ft. The new building will have eight floors, including lower ground floor and sub-basement. The plans have been prepared by the architect, Mr. Henry A. Saul, F.R.I.B.A., of 10, Gray's Inn-square, W.C. 1, and provide for steel frame and brick construction, a Portland stone front and mansard roof with a pediment which will probably carry the Leathersellers' coat-of-arms. The design for the frontage includes a central block and pilasters extending from the first to the third floor, two main entrances with small balconies above and approached by a flight of stone steps. It is understood the general construction of the main building will be such as to harmonise with the adjoining building, known as No. 3, St. Helen's-place, which was designed by the late H. Chatfeild Clarke. At the same time, the new building will have its own distinctive features. The general contract has been secured by Messrs. John Greenwood, Ltd., of 12, Arthur-street, E.C. 4. The floors will be constructed by the patent system of Messrs. Horace W. Cullum & Co., Ltd., of 50, Britannia-street, W.C. 1. The carving necessary on the frontage will be done by Messrs. E. J. & A.T. Bradford, sculptors, of 62A, Borough-road, S.E. 1. Other sub-contracts settled are :—Steelwork : Messrs. Redpath, Brown & Co., Ltd., of 3, Laurence Pountney-hill, E.C.4 ; stonework for frontage : Messrs. United Portland Stone Firms, Ltd. It is understood the Telegraph Co. will occupy all the lower floors up to and including the first floor, kitchen and cooking accommodation being provided for their staff. The remainder of the floors will be let as offices.

TWICKENHAM.—A commencement has just been made with the erection of a new War Memorial Hospital for the Metropolitan and City Police Orphanage at Strawberry-hill. The plans have been prepared by the architect, Mr. H. J. S. Abrams, of 19, Buckingham-street, W.C. 1. The new hospital will consist of a main block of two-story buildings, 80 ft. by 40 ft., comprising two wings, each containing a ward for six beds and isolation wards, lavatories, bath-rooms, &c. The buildings will be finished with Crowborough facing bricks and the roof will be of Westmorland slates. The general contract, which is being carried out by Messrs John Laing & Son, Ltd., of 3, Lincoln's Inn Fields, W.C. 2, will entail an expenditure of about £20,000.

NORTH KENSINGTON.—The construction of modern factory building has just been commenced in this district for Messrs. Florence Henry, Ltd., costume manufacturers, of 39, New Bond-street, W. 1. The site chosen

occupies No. 150, Walmer-road, on which a single floor building is in course of erection, having a frontage of 101 ft. and an average depth of 60 ft. It will be constructed in steel and brickwork with facings of red brick and ornamental plinths. The plans have been prepared by Mr. James J. S. Naylor, F.R.I.B.A., of 19, Hanover-square, W. 1. The general contract has been secured by Messrs. Griggs & Son, of 100, Victoria-street, S.W. 1. The factory will be equipped with the most up-to-date plant, including special lace-making machinery. The following sub-contracts have been settled:—Steelwork: Messrs. H. Young & Co., Ltd., of 6, Wandsworth-road, S.W. 8; metal casements: Messrs. Crittall Manufacturing Co., Ltd., of 246, High Holborn, W.C. 1; glazing: Messrs. Henry Hope & Sons, Ltd., of 59, Berners-street, W. 1; heating: Messrs. George Jennings, Ltd., of 63, Lambeth Palace-road, S.E. 1.

SOUTH-EAST.—The adaptation and additions to the premises formerly occupied by the Benevolent Society of St. Patrick, instituted A.D. 1784 as a school for Catholic children, is now proceeding. The site is a corner one, having a frontage to Stamford-street and elevations to Duke-street and Little Duke-street. The London County Council propose to convert the existing buildings into a Central Printing School, the plans for this work having been prepared in the Council's Architects' Department. The greater part of the school playground will be covered-in to form a machine shop. By converting the existing rooms provision will also be made for complete lithographic rooms, laboratory and shops for casting and moulding the type, &c. Steel and brick construction will be used for the new work, and the general contract has been secured by Messrs. Douglass, Halse & Co., Ltd., of 24, Green's-end, Woolwich, S.E. The steelwork is being supplied by Messrs. Measures Bros. (1911), Ltd., of 105, Southwark-street, S.E.1.

MAYFAIR.—A block of modern self-contained flats is now in course of erection, having a frontage of 94 ft. to Dorset-street and 34 ft. to Montagu-place, with an average depth of 64 ft. There will be six floors, and the front will be finished in mottle brick. The plans have been prepared by the architects, Messrs. Trehearne & Norman, of Windsor House, Kingsway, W.C.2. The general contract is being carried out by Messrs. Griggs & Son, of 100, Victoria-street, S.W.1. No sub-contracts have yet been settled.

FOREST GATE.—An extension is now being made to the existing factory of Messrs. Robertson & Woodcock, Ltd., manufacturing confectioners, of 16, Shaftesbury-road, E.7. A new building of three floors, with a frontage of 64 ft. and a depth of 44 ft., is being added to the main factory. Steel and brick construction will be used, and there will be a north-light roof of asbestos slate. There will also be a block of offices, 66 ft. by 35 ft., to be constructed in steel and brickwork, with a flat asphalted roof. The plans have been prepared by the architects, Messrs. Smee & Houchin, of Byron House, Fleet-street, E.C.4. The general contract will be carried out by Messrs. Griggs & Son, of 100, Victoria-street, S.W.1. The sub-contracts settled are as follows:—Steelwork: Messrs. Sanders & Forster, Ltd., of Thames Works, Hertford-road, Barking; glazing: Messrs. Henry Hope & Sons, Ltd., of 59, Berners-street, W.1; asphalte: Messrs. J. A. Lawford & Co., of Bow Bridge, E.15.

BOOKS RECEIVED.

THE SUPERFICIAL CALCULATOR. By John Whiting, Jnr. (Cromer: John Whiting.) Price 5s.

DICTIONARY OF APPLIED PHYSICS. 5 vols. Edited by Sir Richard Glazebrook. (London: Macmillan & Co., Ltd.) Price £3 3s. net each.

RESEARCH IN INDUSTRY. By A. P. M. Fleming and J. G. Pearce. (London: Sir Isaac Pitman & Sons, Ltd.) Price 10s. 6d. net.

FARM BUILDINGS AND BUILDING CONSTRUCTION IN SOUTH AFRICA. By W. S. H. Cleghorne. (London: Longmans, Green & Co.) Price 25s.

IS TRADE UNIONISM SOUND? By J. H. Bunting. (London: Benn Brothers, Ltd.) Price 2s. 6d.

RATES OF WAGES IN THE BUILDING TRADE.

The following are the rates of wages in the building trade in England and Wales. Every endeavour is made to ensure accuracy, but we cannot be responsible for errors that may occur:—

	Masons.	Bricklayers.	Carpenters, Joiners.	Plasterers	Slaters.	Plumbers.	Painters.	Masons' Labourers.	Bricklayers' Labourers.	Plasterers' Labourers.
Aberdare	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Accrington	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Altrincham	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Ashton-under-Lyne	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Barnsley	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Barrow-in-Furness	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Barry	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Bath	1/5	1/5	1/5	1/5	1/5	1/5	1/5			1/0½
Bedford	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½			1/0½
Birkenhead	1/10	1/10	1/10	1/10	1/10	1/10	1/10			1/0½
Birmingham	1/8	1/8	1/8	1/8	1/8	1/9	1/8			1/3
Bishop Auckland	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Blackburn	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Blackpool	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Bolton	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Bournemouth	1/4½	1/4½	1/4½	1/4½	1/5½	1/4½	1/4½			1/0½
Bradford	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Bridgwater	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½			0/11½
Brighton	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½			1/0½
Bristol	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Burnley	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Burton-on-Trent	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½			1/2
Bury	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Cambridge	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½			1/0½
Cardiff	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Chatham	1/4	1/4	1/4	1/4	1/4	1/4	1/4			1/0
Chelmsford	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½			1/0½
Cheltenham	1/5	1/5	1/5	1/5	1/5	1/5	1/5			1/0½
Chester	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Chesterfield	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Colchester	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½			1/0½
Coventry	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Crewe	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½			1/2
Darlington	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Derby	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Doncaster	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Dudley	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½			1/2
Durham	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
E. Glam. Mon. Vall.	1/4	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Eastbourne	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½			1/0½
Exeter	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½			1/0½
Folkestone	1/4	1/4	1/4	1/4	1/4	1/4	1/4			1/0
Gloucester	1/5	1/5	1/5	1/5	1/5	1/5	1/4			1/0½
Grantham	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½			1/2
Grays	1/8	1/8	1/8	1/8	1/8	1/8½	1/8			1/3
Grimsby	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Great Yarmouth	1/4	1/4	1/4	1/4	1/4	1/4	1/4			1/0
Guildford	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½			1/0½
Halifax	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Harrogate	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Hartlepools	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Hastings	1/4	1/4	1/4	1/4	1/4	1/4	1/4			1/0
Hereford	1/5	1/5	1/5	1/5	1/5	1/5	1/4			1/0½
Huddersfield	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Hull	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Ipswich	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½			1/0½
Lancaster	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Leamington Spa	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½			1/2
Leeds	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Leicester	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Lichfield	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½			1/2
Lincoln	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Liverpool	1/10	1/10	1/10	1/10	1/10	1/10	1/10			1/5½
Llanelly	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
London	1/8	1/8	1/8	1/8	1/8	1/8½	1/7			1/3
Loughborough	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Luton	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½			1/0½
Maidstone	1/4	1/4	1/4	1/4	1/4	1/4	1/4			1/0
Manchester	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Mansfield	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Merthyr Tydfil	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Middlesbrough	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Newcastle-on-Tyne	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Newport, Mon.	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Northampton	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½			1/2
Norwich	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½			1/0½
Nottingham	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Oakham	1/5	1/5	1/5	1/5	1/5	1/5	1/5			1/0½
Oldham	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Oxford	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½			1/0½
Plymouth	1/6	1/6	1/6	1/6	1/6	1/6	1/5			1/1½
Pontypridd	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Portsmouth	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½			1/0½
Preston	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Reading	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½			1/0½
Rochdale	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Rochester	1/4	1/4	1/4	1/4	1/4	1/4	1/4			1/0
Rugby	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½			1/2
St. Albans	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½			1/0½
St. Helen's	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Scarborough	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½			1/2
Sheffield	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Shrewsbury	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½			1/2
Southampton	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½			1/0½
Southend-on-Sea	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½			1/0½
Southport	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
South Shields	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Stockport	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Stockton-on-Tees	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Stoke-on-Trent	1/8	1/8	1/8	1/8	1/8	1/9	1/0			1/3
Stroud	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4			1/0½
Sunderland	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Swansea	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Swindon	1/5	1/5	1/5	1/5	1/5	1/5	1/4			1/0½
Taunton	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½			1/0½
Torquay	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½			1/0½
Tunbridge Wells	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½			1/0½
Wakefield	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Walsall	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½			1/2
Warrington	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
West Bromwich	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Wigan	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Windsor	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½			1/0½
Wolverhampton	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Worcester	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½			1/2
York	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½			1/2

(For rates of wages in the Building Trade in Scotland, see page 32.)

CONTRACTS, COMPETITIONS, &c.

For some contracts still open, but not included in this List, see previous issues. Those with an asterisk are advertised in this number. Certain conditions beyond those given in the following information are imposed in some cases, such as that advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bona-fide tender unless stated to the contrary.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in; the name and address at the end is the person from whom or place where quantities, forms of tender, &c., may be obtained.

BUILDING AND PAINTING.

JULY 8.—**Barnsley.**—OUTBUILDINGS.—Tenders are invited for any, or the whole, of the trades required to be done in the erection of pining sheds and outbuildings off Queen's-road, Barnsley. Mr. P. A. Hinchliffe, F.R.I.B.A., 14, Regent-street, Barnsley.

JULY 8.—**Southsea.**—CHURCH INSTITUTE.—Erection of St. Peter's Church Institute, for the Church Council. Mr. A. E. Tutte, architect, 38, Commercial-road, Portsmouth. Deposit £2 2s.

JULY 8.—**Stafford.**—PAINTING.—Painting, &c., a portion of the Poor-Law Institution, for the Board of Guardians. Master of the Institution, Marston-road, Stafford.

✱JULY 10.—**Birmingham.**—HOUSES.—Erection of 48 non-parlour and 32 parlour type houses in Lime Tree, Ward End, and Nansen roads, Washwood Heath, in two contracts, and 80 houses in Lyndon, Manor and Leonard roads, Stechford, in two contracts, for the Public Works and Town-Planning Committee. Mr. Herbert H. Humphries, M.Inst.C.E., City Engineer and Surveyor, The Council House, Birmingham. Deposit £2.

JULY 10.—**Bradford.**—PAINTING.—For colouring, &c., required at the various schools. City Architect, Town Hall, Bradford.

JULY 10.—**Bridgwater.**—REPAIRS.—For renovation of schools and buildings, for the Education Committee. Borough Surveyor, Municipal Buildings, Bridgwater.

JULY 10.—**Chelmsford.**—PAINTING.—For painting and colour-washing at certain schools, for the T.C. Borough Engineer, Municipal Offices, Chelmsford.

JULY 10.—**Clitheroe.**—PAINTING.—For painting elementary schools, for the T.C. Mr. A. R. Bleazard, Borough Engineer, Church-street, Clitheroe.

JULY 10.—**Farnborough.**—BRIDGE.—Widening of a brick arch bridge, at Lynchford-road, for the U.D.C. Mr. J. E. Hargreaves, Engineer, Town Hall, Farnborough, Hants.

JULY 10.—**Lancashire.**—PAINTING.—Painting of certain steel bridges within the Administrative County, for the Lancashire C.C. Mr. W. H. Schofield, County Surveyor, County Offices, Preston.

JULY 10.—**Morley.**—PAINTING.—External painting at Peel-street Council Schools, for the T.C. Mr. F. Turner, Borough Engineer, Town Hall, Morley.

JULY 10.—**Nottingham.**—PAINTING.—Internal painting at the City Asylum, Mapperley Hill. City Architect's Office, Guildhall, Nottingham. Deposit £1.

JULY 10.—**Oxford.**—BATHS.—Erection of a building and the fitting up of same as "District Public Baths," on land in the rear of Greyfriars House, Paradise-street, for the T.C. City Estates Surveyor, Town Hall, Oxford.

JULY 10.—**Plymouth.**—OFFICES, &C.—Erection of offices at Milehouse; and erection of an additional car shed, for the T.C. Borough Engineer, Municipal Offices, Plymouth. Deposit £2 2s.

JULY 10.—**Plymouth.**—PAINTING.—Painting at the following buildings:—(*a*) Refuse destructor works, Prince Rock; (*b*) Old Guildhall, Whimple-street; (*c*) electricity works, Prince Rock; (*d*) electricity works, Newport-street; (*e*) electricity sub-station, Armada-street. Mr. T. Peirson Frank, Borough Engineer, Municipal Offices, Plymouth.

JULY 10.—**Plymouth.**—REPAIRS.—Repair of premises, situate at 30, Frederick-street, and 27, King-street, for the T.C. Medical Officer of Health's (Housing) Department, Town Hall, East Stonehouse, Plymouth.

JULY 10.—**Porth.**—PAINTING.—Painting, &c., the external wood and ironwork of the following blocks of houses:—202 dwelling houses and colliery offices at Senghenydd; 54 dwelling houses at Senghenydd; 409 dwelling houses at Llwyncelyn, Porth; 54 dwelling houses at Ogmore Vale. Lewis Merthyr Consolidated Collieries, Ltd., Senghenydd, Porth and Ogmore Vale.

JULY 10.—**Reading.**—PAINTING.—Works of renovation at Caversham Council, Katesgrove, New Town, Swansea-road, Whitley Special and George Palmer Schools, Education Office, Blagrave-street, Reading. Deposit 10s.

JULY 10.—**Saddleworth.**—PAINTING.—For painting at various houses, for the U.D.C. Mr. E. Rowbottom, Clerk, Council Offices, Saddleworth.

JULY 10.—**Wallasey.**—HOUSES.—Erection of four cottages at Waterloo Farm, Sealand, near Chester, for the T.C. Mr. George Livsey, Town Clerk, Town Hall, Wallasey. Deposit £1 1s.

JULY 10.—**Wrexham.**—PAINTING.—For redecorating Alexandra and St. Mary's Schools, for the T.C. Borough Engineer, Wrexham.

JULY 11.—**Baildon.**—PAINTING.—For colouring, painting, etc., at the Baildon Conservative Club. Mr. J. Wilkinson, Hon. Sec., Club, Baildon.

JULY 11.—**Bray.**—HOUSES.—Erection of 20 houses, for the U.D.C. Mr. Carthy, Quantity Surveyor, 39, Westmoreland-street, Dublin. Deposit £2 2s.

JULY 11.—**Chelsea.**—DECORATIONS.—Internal painting, whitewashing, and repairs to the Nurses' Home at the Infirmary, Cale-street, Chelsea, for the Guardians of the Poor of the Parish of Chelsea. Mr. E. J. Harrison, Guardians Architect, 23, Berkeley-road, Crouch End, N.8. Deposit £2.

JULY 11.—**Conisbrough.**—PAINTING.—For painting at park and recreation grounds, &c. Mr. H. Thirlwall, Surveyor, Council Offices, Conisbrough.

JULY 11.—**Dewsbury.**—ALTERATIONS.—Alterations to shop premises, Wellington-road, Dewsbury, for Mr. W. A. Stevens. Messrs. Firth, Son, & Blackburn, A.R.I.B.A., 22, Wellington-road, Dewsbury.

JULY 11.—**Easington.**—CONVENIENCE.—Erection of brick urinal at Shotton Colliery, for the R.D.C. Mr. F. W. Girven, Surveyor, Council Offices, Easington.

JULY 11.—**Fulham.**—PAINTING.—For painting and decorating work at the Infirmary, St. Dunstan's-road, and the Guardians' Offices in Fulham Palace-road, for the Board of Guardians. E. J. Mott, Clerk, Fulham Palace-road, W.

JULY 11.—**Hertford.**—ALTERATIONS.—For alterations to fire station for the T.C. Borough Surveyor, The Castle, Hertford.

JULY 11.—**Hove.**—PAINTING.—For painting at various schools and at offices, for the T.C. Mr. H. H. Scott, Borough Surveyor, Town Hall, Hove.

JULY 11.—**Kent.**—PAINTING.—For painting County Police Stations at Broadstairs and Dartford and Sessions Houses at Maidstone and Canterbury, for the Kent C.C. County Architect, 86, Week-street, Maidstone.

JULY 11.—**London, E.17.**—RENOVATIONS AND PAINTING.—Carrying out certain work of school renovations in painting, distempering, &c., to the interiors of three schools for the Walthamstow Education Committee. Mr. H. Prosser, Architect to the Committee, 263, High-street, Walthamstow, E.17.

JULY 11.—**Newport (Isle of Wight).**—PAINTING.—For painting, &c., at various schools, for the C.C. Mr. S. R. Cocks, St. Thomas-street, Ryde.

JULY 11.—**Nottingham.**—PAINTING.—For cleaning and painting at various Council schools. Mr. A. Dale, City Architect, Guildhall, Nottingham. Deposit £1 1s. each contract.

JULY 11.—**Uxbridge.**—HOUSES.—Erection of seven blocks of four houses each and seven pairs of houses, and for new road and surface-water sewer, &c., for the U.D.C. Mr. William L. Eves, F.R.I.B.A., 54, High-street, Uxbridge. Deposit £3 3s.

JULY 12.—**Barnsley.**—HOUSE.—For the various trades required in the erection of a house, Kensington-road, Barnsley. Mr. C. F. Moxon, architect, Regent-street South, Barnsley.

JULY 12.—**Brixham.**—RENOVATIONS.—For renovations at parish church. Sexton, Brixham.

JULY 12.—**Carlisle.**—PAINTING.—Painting and other works required to be done in four of the elementary schools, for the T.C. Mr. Henry C. Marks, Surveyor, Fisher-street, Carlisle.

JULY 12.—**Dewsbury.**—PAINTING.—Cleaning and painting of the Union Offices, Wellington-street, Dewsbury, for the Board of Guardians. Mr. E. T. Tunnicliffe, Clerk, Union Offices, Dewsbury.

JULY 12.—**Doncaster.**—PAINTING.—Cleaning and decorating of schools, for the T.C. Mr. G. R. H. Danby, Secretary, Education Offices, Doncaster.

JULY 12.—**Driffield.**—PAINTING.—For painting outside of Poor Law Institution, for the Board of Guardians. Mr. G. Harker, Clerk, 17, Exchange-street, Driffield.

JULY 12.—**Durham.**—PAINTING.—For oustide painting at the following county police stations:—(1) Assize Courts, Durham; (2) Birtley; (3) Chester-le-Street; (4) Chopwell; (5) Constabulary Headquarters, Durham; (6) Coxhoe; (7) Felling-on-Tyne; (8) Fighting Cocks; (9) Middleton-in-Teesdale; (10) Washington, for the Durham C.C. Mr. A. E. Brookes, County Surveyor, Durham.

JULY 12.—**Edinburgh.**—MASONS' WORKS.—Repairs to and repointing of the masonry of structure of Colinton Viaduct, for the T.C. Engineer, 1, Parliament-square, Edinburgh.

JULY 12.—**Ilkley.**—PAINTING, &C.—Internal renovations and external painting at Ilkley, Ben Rhydding Council School, for the West Riding E.C. Education Department, County Hall, Wakefield.

JULY 12.—**London, E.**—STEEL AND REINFORCED CONCRETE.—Extensions and alterations to the Limehouse Electricity Generating Station, Narrow-street, Limehouse, E.14 (Contract No. 249), composed of steel framing and reinforced concrete, for the Council of the Metropolitan Borough of Stepney. Borough Engineer and Surveyor (Mr. Bernard J. Belsher, A.M.I.C.E., M.I.M.E.) at the Municipal Offices, Raine-street, Old Gravel-lane, E.1, between 10 a.m and noon. Deposit £5 Bank of England Note.

JULY 12.—**Monmouthshire.**—PAINTING AND REPAIRS.—Painting and colouring about 36 elementary schools in the County of Monmouth, and repairs to the Sudbrook Council School. Mr. John Bain, F.R.I.B.A., County Hall, Newport.

✱JULY 12.—**Near Stourbridge.**—Erection of an administration block at Prestwood Sanatorium. Mr. A. Eaton Painter, architect, Washington-buildings, Berry-street, Wolverhampton. Deposit £2 2s.

JULY 12.—**Normanton.**—PAINTING.—For painting Normanton Wesleyan Church. Mr. A. Harris, draper, High-street, Normanton.

✱JULY 12.—**Whitton.**—HOUSES.—Erection of 20 "A" type houses on the Prospect-crescent Site, for Twickenham U.D.C. The Surveyor to the Council, Town Hall, Twickenham. Deposit £2 2s.

✱JULY 12.—**Ypres.**—MEMORIAL ARCH.—Preparatory arrangements to call for tenders for a memorial arch to be built at the Menin Gate, Ypres, for the Imperial War Graves Commission. The Secretary (Works Dept.), Imperial War Graves Commission, 82, Baker-street, London, W.1. Deposit £50.

JULY 13.—**East Retford.**—PAINTING.—Painting and decorating of Town Hall Buildings, for the T.C. Mr. R. E. Wilson, Borough Surveyor, Market-place, Retford, Notts.

JULY 13.—**Lanchester.**—BUNGALOWS.—Erection of bungalows, as follows: Eight bungalows at Esh Winning, 10 bungalows at Langley Park, 14 bungalows at Lanchester, for the R.D.C. Mr. Thomas E. Taylor, L.R.I.B.A., Union Offices, Lanchester.

JULY 13.—**Manchester.**—TARRING.—Tarring of roof principals, standards, &c., at their Rochdale-road Gasworks. Mr. Godfrey W. Kaye, Secretary, Gas Department, Town Hall, Manchester.

BUILDING TRADE WAGES IN SCOTLAND.*

THE following are the present rates of wages in the building trade in the principal towns of Scotland. Every endeavour is made to ensure accuracy, but we cannot be responsible for errors that may occur:—

	Masons.	Bricklayers.	Carpenters, Joiners.	Plasterers.	Slaters.	Plumbers.	Painters.	Masons' Bricklayers' Plasterers' Labourers.
Aberdeen	1/7	1/10½	1/7	1/7½	1/8	1/9	1/7	1/2 to 1/4
Airdrie	1/8	1/8	1/8	1/8	1/8	1/8	—	1/3
Alexandria	1/10	1/10	1/10	1/10	1/10	1/10	—	1/5
Arbroath	1/7	1/7	1/7	1/7	1/7	1/7	1/8	1/1
Ayr	1/8	1/8	1/8	1/8	1/8	1/8	1/9	1/3
Bathgate	1/8	1/8	1/8	1/8	1/8	1/8	1/9	1/2
Blairgowrie	1/7	—	1/7	1/7	1/7	1/7	1/7	—
Bo'ness	1/10	1/10	1/10	1/10	1/10	1/10	1/10	1/5
Coatbridge	1/8	1/8	1/8	1/8	1/8	1/8	1/9	1/3
Dumbarton	1/8	1/8	1/8	1/8	1/8	1/8	1/9	1/3
Dumfries	1/6	1/6	1/6	1/6	1/6	1/8	1/8	1/2 1/2½ 1/3½
Dundee	1/8	1/8	1/8	1/8	1/8	1/8	1/9	1/3
Dunfermline	1/10	1/10	1/10	1/10	1/10	1/10	1/10	1/5
Duns	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/0
Edinburgh	1/8	1/8	1/8	1/8	1/8	1/8	1/9	1/3
Falkirk	1/8	1/8	1/8	1/8	1/8	1/8	1/9	1/3
Fort William	1/10	1/10	1/10	1/10	1/10	1/10	1/9	1/2½
Galashiels	1/8	1/8	1/8	1/8	1/8	1/8	—	—
Glasgow	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3
Greenock	1/8	1/8	1/8	1/8	1/8	1/8	1/9	1/1 to 1/3
Hamilton	1/8	1/8	1/8	1/8	1/8	1/8	1/9	1/7½
Hawick	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3
Helensburgh	1/10	1/10	1/10	1/10	1/10	1/10	1/10	1/5
Inverness	1/6½	—	1/6	1/7	1/6½	1/7	1/6	1/0 to 1/3
Kilmarnock	1/8	1/8	1/8	1/8	1/8	1/8	1/9	1/3
Kirkcaldy	1/10	1/10	1/10	1/10	1/10	1/10	—	1/5
Kirkwall	1/5	1/9	1/4	1/5	1/5	1/5	—	1/2
Lanark	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3
Leith	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/2
Motherwell	1/8	1/8	1/8	1/8	1/8	1/8	—	1/3
Perth	1/8	1/8	1/8	1/8	1/8	1/8	1/7	1/2
Stirling	1/8	1/8	1/8	1/8	1/8	1/8	1/9	1/3
Stirlingshire (Eastern District)	1/8	1/8	1/8	1/8	1/8	1/8	1/9	1/3
Wishaw	1/8	1/8	1/8	1/8	1/8	1/8	—	1/3

* The information given in this table is copyright. The rates of wages in the various towns in England and Wales are given on page 31

JULY 13.—**Middleton.**—PAINTING.—Painting church and schools, for the Trustees of Providence Congregational Church. Mr. W. Taylor, Secretary Co-operative Society, Long-street, Middleton.

✱JULY 13.—**Whitehaven, Cumberland.**—CONVERSION.—For the conversion of Whitehaven Castle for the purposes of a Hospital for the Committee of the Whitehaven and West Cumberland Infirmary. Messrs. Saxon Snell & Phillips, architects, 9, Bentinck-street, Manchester-square, London, W. 1.

JULY 14.—**Ellesmere.**—VARIOUS WORKS.—(1) Re-slating the south side of the roof and pointing the walls in the gables of the Nonconformist Chapel; and (2) pointing and repairing the brick and cement work and tarring the woodwork in the walls of the Cemetery Lodge, for the Ellesmere Parishes Joint Burial Committee. Mr. E. O. Jones, Clerk, Ellesmere.

JULY 14.—**Lowestoft.**—ALTERATIONS.—For alterations at Victoria-road School, for the T.C. Borough Surveyor, Town Hall, Lowestoft.

JULY 14.—**Oldbury.**—PAINTING.—For painting at four schools, for the U.D.C. Mr. Roland Fletcher Surveyor to the Education Committee, Public Buildings, Oldbury. Deposit £2.

JULY 14.—**Oldbury.**—PAINTING, &C.—For painting and decorating the public buildings, for the U.D.C. Mr. Roland Fletcher, Surveyor, Public Buildings, Oldbury. Deposit £2.

JULY 15.—**Danny.**—HOUSES.—Erection of 20 houses, for the T.C. Messrs. James Strang & Wilson, architects, Falkirk.

JULY 15.—**Exeter.**—EXTENSION.—Extension of tramway depot, for the T.C. City Architect, 6, Southernhay West, Exeter. Deposit £2.

JULY 15.—**Horncastle.**—BRIDGE.—Taking down and rebuilding in reinforced concrete the bridge on the road near the school at Bucknall, for the R.D.C. Council Offices, 4, Church-lane, Horncastle.

JULY 15.—**Ossett.**—PAINTING.—Painting various schools, for the T.C. Mr. E. Lucas, Secretary for Education, Ossett.

✱JULY 17.—**Birmingham.**—HOUSES.—Erection of 64 houses in Croydon and Erdington Hall roads, Wheelwright Estate, and 27 houses in Churchill-road, Bordesley Green, for the Public Works and Town-Planning Committee. Mr. H. H. Humphries, M.Inst.C.E., City Engineer and Surveyor, The Council House, Birmingham. Deposit £2.

JULY 17.—**Dumfries.**—SANATORIUM.—Erection of proposed sanatorium or hospital buildings near Lochmaben, for the Dumfries and Galloway Joint Sanatorium Board. Mr. John Robson, Clerk of the Board, County Buildings, Dumfries. Deposit £1 1s.

JULY 17.—**Guildford.**—REPAIRS, &C.—Repairs and decorations at Woodbridge Isolation Hospital, for the Guildford, Godalming and Woking Joint Hospital Board. Mr. J. H. Norris, Licentiate R.I.B.A., 51, High-street, Guildford.

✱JULY 17.—**Hunslet.**—HOUSES.—Erection of houses (a maximum of 49 houses) of various types, for the Rural District Council. Mr. W. B. Pindar, Clerk to the Council, Council Offices, Leek-street, Hunslet, Leeds.

JULY 17.—**Perranwell.**—BUNGALOW.—Erection of bungalow. Mr. A. J. Cornelius, architect, Truro.

✱JULY 17.—**Surbiton.**—HOUSES.—Erection of six houses at Surbiton Hill, for the U.D.C. The Council Offices, Ewell-road, Surbiton. Deposit £1 1s.

JULY 17.—**Trowbridge.**—REPAIRS.—For repairs, &c., at Council schools, for the Wilts C.C. Mr. T. Walker, County Architect, Trowbridge.

✱JULY 18.—**Chiswick.**—PAINTING, &C.—For repairs and painting at six schools, for the U.D.C. Mr. Edward Willis, Town Hall, Chiswick.

JULY 18.—**Darlington.**—STONE WORK.—For stone work for proposed bridge, New-road, Grange-road to Neasham-road, for the T.C. Borough Surveyor, Town Hall, Darlington.

JULY 18.—**Leeds.**—CONVENIENCES.—Reconstruction of w.c.'s and urinals at Primrose-hill Council School. Architect's Section, Education Offices, Calverley-street, Leeds.

✱JULY 18.—**Rainham, Kent.**—FARM BUILDINGS.—For 12 sets of farm buildings at East Moor-street Farm, for Kent C.C. Small Holdings Sub-Committee. Mr. W. H. Robinson, F.S.Arc., Sessions House, Maidstone. Deposit £1.

JULY 19.—**Bridgend.**—PAINTING.—External painting at Angelton Mental Hospital, Bridgend. Mr. Hugh W. Davies, Clerk, Bridgend.

JULY 19.—**Caerwys.**—INSTITUTE.—Erection of War Memorial Institute. Mr. L. Jones, Hill Crest, Caerwys, Flintshire.

JULY 19.—**Carshalton.**—ALTERATIONS.—Alterations and additions to scullery of the nurses' mess room at Queen Mary's Hospital for Children, Carshalton, for the Metropolitan Asylums Board. Office of the Board, Embankment, E.C.4. Deposit £1.

✱JULY 19.—**Kent.**—CLEANING, PAINTING, REPAIRS.—Cleaning and painting works and repairs at Joyce Green and Orchard Hospitals, Dartford, Kent, for the Metropolitan Asylums Board. Office of the Board, Embankment, E.C.4. Deposit £1.

JULY 19.—**London.**—BAKERS' OVEN.—Installation of brick-built baker's oven at North-Western Fever Hospital, Hampstead, for the Metropolitan Asylums Board. Offices of the Board, Embankment, E.C.4. Deposit £1.

JULY 19.—**Lynton, Devon.**—POST OFFICE.—Erection of a new post office at Lynton, Devon, for the Commissioners of His Majesty's Office of Works. Contracts Branch, H.M.O.W., King Charles-street, W.S.1. Deposit £1 1s.

JULY 20.—**Coedpoeth.**—DRILL HALL.—Erection of a drill hall at Coedpoeth, for the Denbighshire Territorial Army Association. Captain Gronwy Griffith, architect, Denbigh.

✱JULY 20.—**London, S.E.1.**—REPAIRS, &C.—For internal and external repairs and redecoration at the Guardians' Offices, 283, Tooley-street, for the Guardians of the Parish of Bermondsey. Mr. Henry H. Reeve, Clerk, 283, Tooley-street, S.E.1. Deposit £10.

JULY 20.—**London, N.W. 1.**—ALTERATIONS.—For structural alterations to Sub-station, Grafton-road, N.W., for the Metropolitan Borough of St. Pancras. Electricity Department Offices, 57, Pratt-street, N.W. 1. Deposit £2.

JULY 20.—**Worcestershire.**—PAINTING.—For cleaning and painting the ironwork of each of the following bridges, viz.: Stourport, Holt Fleet, Upton-on-Severn, for the Worcestershire C.C. Mr. Chas. F. Gettings, County Surveyor, 30, Foregate-street, Worcester.

JULY 21.—**West Putford.**—FARMHOUSE.—Erection of new farmhouse, for the Devon C.C. Mr. W. J. M. Thomasson, Architect for Small Holdings, 18, Cathedral-yard, Exeter.

JULY 21.—**Whitley Bay.**—POST OFFICE.—Erection of a new post office, for the Commissioners of H.M. Office of Works. Contracts Branch, H.M. Office of Works, King Charles-street, London, S.W.1. Deposit £1 1s.

✱JULY 22.—**Bridlington.**—HOUSES.—Erection of 12 houses on the Postill's Estate, for the B.C. The Borough Engineer and Surveyor, 1, The Crescent, Bridlington. Deposit £3 3s.

JULY 22.—**Ipswich.**—PAINTING.—For painting outside of two lodges, shelter and iron fencing, for Burial Board. Mr. F. B. J. Groom, Clerk to the Board, Ipswich.

JULY 22.—**Kent.**—COTTAGES.—Erection of a cottage at Brockton Farm, Charing, and Coombe Farm, Hawkinge, near Folkestone, for the Kent C.C. County Land Agent, Sessions House, Maidstone.

JULY 24.—**Redruth.**—CONVENIENCES.—Erection of public lavatories in Cross-street, for the U.D.C. Mr. T. F. King, surveyor, 2, Station Hill, Redruth.

JULY 24.—**Wakefield.**—SHELTERS.—Supply of seven sectional wood shelters. West Riding Architect, County Hall, Wakefield.

JULY 24.—**Weymouth.**—REBUILDING.—For pulling down and rebuilding 16, St. Thomas-street, for Messrs. V. H. Bennett & Co. Mr. A. J. Bennett, architect, Gloucester-street, Weymouth.

✱JULY 25.—**Gateshead.**—HOUSES.—For 30 additional houses, in pairs, at Carr Hill, for the County Borough. Mr. Richard Wylie, A.R.I.B.A., 24, Grainger-street West, Newcastle-on-Tyne.

JULY 26.—**St. Marylebone.**—TENEMENTS.—Erection of two blocks of tenements (flats) at the Fisherton-street Housing Site, for the Metropolitan Borough Council. Messrs. Ashley & Newman, architects, 14, Gray's Inn-square, W.C.2. Deposit £5 5s.

✱JULY 26.—**Walthamstow.**—FIRE STATION, &C.—For erection of a fire station and superintendent's house at Forest-road, for the U.D.C. Mr. G. W. Holmes, A.M.I.C.E., Town Hall Annexe, Walthamstow.

JULY 27.—**Hawarden.**—HOUSES.—Erection of 22 houses, Type A, and also alternative tenders for 22 houses, Type B, at Saltney, for the R.D.C. Mr. Fred Barrett, Surveyor's Office, Hawarden. Deposit £2 2s.

NO DATE.—**Birmingham.**—COTTAGES.—Erection of one pair of cottages at Acock's-green. Mr. John D. Watson, Engineer, Erdington Park, Birmingham.

NO DATE.—**Bridgend.**—ALTERATIONS.—Additions and alterations to "Uchel-oleu," near Bridgend, for Mr. Trevor Morse Evans, Pontypridd. Messrs. Veall and T. J. Evans, architects, Cardiff.

✱NO DATE.—**Chester.**—ALTERATIONS, &C.—About 30 separate contracts for alterations, additions, general repairs and remodelling the existing farm buildings and cottages, for the C.C. Mr. F. Anstead Browne, Lic.R.I.B.A., Deputy County Architect, 16, Nicholas-street, Chester.

NO DATE.—**Denton.**—GOLF HOUSE.—Erection of new clubhouse, for the Denton Golf Club. Messrs. Thorpe & Collier, architects, 66, Deansgate, Manchester. Deposit £1 11s. 6d.

NO DATE.—**Rothwell.**—PAINTING.—For repainting the premises of the Rothwell Mechanics' Institute. Mr. W. F. Hirst, Surveyor, Rothwell, Leeds.

FURNITURE, MATERIALS, etc.

JULY 10. — **Bedlington.** — ROAD MATERIALS. — Supply of tarred slag and other road materials to the U.D.C. Mr. J. W. Podley, Surveyor, Bedlington.

JULY 14.—**London.**—ELECTRIC LAMPS.—Supply to the Bombay, Baroda, and Central India Railway Co., of metallic filament lamps. Mr. S. G. S. Young, Secretary, 91, Petty France, Westminster, S.W.1. Charge 10s.

JULY 14.—**London.**—VARNISH.—Supply to the High Commissioner of India of varnishes of various description. Director-General, Stores Department, Belvedere-road, S.E.

JULY 14.—**South Africa.**—PORTLAND CEMENT.—For the supply of 100,000 bags, or 50,000 casks, of Portland cement, of quality equal to British standard specification, for the Kamanassie Irrigation Board, Oudtshoorn Department (Room 41), 35, Old Queen-street, London, S.W.1.

JULY 15.—**Bristol.**—MATERIALS.—Supply to the Board of Guardians of bricks and sanitary appliances, timber, oils and colours, ironmongery (builders' and heavy articles). Mr. J. J. Simpson, Clerk, St. Peter's Hospital, Bristol.

JULY 21.—**London.**—CEMENT.—Supply of Portland cement to the High Commissioner for India. Director-General, India Store Dept., Belvedere-road, S.E.

ENGINEERING, IRON AND STEEL.

JULY 8.—**Ramsgate.**—WEIGHBRIDGE.—Supplying and erecting at the Gas Works one 15-ton weighbridge, for the T.C. Mr. R. Hy. Ruthven, Engineer, Ramsgate.

JULY 10.—**Rhondda.**—FENCING.—Supply of 420 yds. of wrought-iron unclimbable fencing, for the U.D.C. Mr. E. Taylor, Surveyor, Council Offices, Pentre, Rhondda.

JULY 10.—**Tipton.**—RETORTS.—Installation of vertical retorts, capacity 750,000 cub. ft. per day, for the T.C. Mr. William Prince, Engineer, Tipton.

JULY 11.—**Manchester.**—ELECTRIC WIRING.—Electric lighting installations at Mulberry-street, Southall-street, Duke-street, Waterloo-road, Sunnyside, and Johnson-street Municipal Schools. Education Offices, Deansgate, Manchester. Deposit £1 1s.

JULY 13.—**Manchester.**—HOIST.—Supply and fixing at the Gas Stove Repair Department, Gleden-street, of a one-ton direct acting ram goods hoist. City Architect, Town Hall, Manchester. Deposit 10s. 6d.

JULY 13.—**Uxbridge.**—LAUNDRY MACHINE.—Supply of a rotary washing machine, for the Board of Guardians, Mr. A. R. Woodbridge, Clerk, 38, High-street, Uxbridge.

JULY 14.—**London.**—MATERIALS.—Supply to the South Indian Railway Company of (1) Firebricks and fireclay, (2) helical springs, (3) spring steel, (4) rolling stock, (5) brass and copper tubes and sheets, (6) buffers for broad gauge wagons, (7) metals. Company's Offices, 91, Petty France, Westminster, S.W.1. Charge 10s. for Nos. 1, 2, 3, 4, and 5, and £1 for Nos. 6 and 7.

JULY 15.—**Cheadle and Gatley.**—ELECTRICAL INSTALLATION.—For electric lighting, heating and power at the U.D. Council Offices and Outbuildings, Cheadle. Mr. John H. Johnson, Clerk to the U.D.C., Cheadle.

JULY 15.—**Epsom.**—VARIOUS WORKS.—(1) Installation of electric wiring of the buildings, motor, telephones, &c.; (2) supply and fixing of overhead electrical conductive and main cables, switchboards, &c.; (3) installation of laundry plant; (4) installation of kitchen plant; (5) installation of bakery plant, at the Eleventh Mental Hospital, Epsom, in course of erection, for the L.C.C. Asylums Engineer of the Council, Gloucester House, 19, Charing Cross-road, W.C. 2. Deposit, £5 each for (1) & (2); and £2 each for (3), (4) & (5).

JULY 15.—**Manchester.**—BRIDGE.—Supply and erection of steelwork required in the bridge carrying the town-planning road No. 25 over the Great Central Railway at Fallowfield. City Engineer's Office, Town Hall, Manchester. Deposit £2 2s.

JULY 15.—**The Bahamas.**—DREDGING.—For the dredging of an entrance channel and mooring basin, in the Harbour of Nassau, New Providence, Bahamas, for the Government. Crown Agents for the Colonies, 4, Millbank, Westminster, S.W.1. Deposit £10.

JULY 17.—**Glasgow.**—VARIOUS.—Steel and iron stairs, railings, ladders, gates, runways, &c., required in connection with the extension of the municipal buildings. Messrs. Watson, Salmond & Gray, architects, 242, West George-street, Glasgow. Deposit £5.

JULY 17.—**Gravesend.**—PLANT, &C.—Supply of electrical plant and construction of artesian well, for the T.C. Mr. C. F. McInnes, Borough Electrical Engineer, Gravesend. Deposit £2 2s.

JULY 17.—**Shrewsbury.**—BRIDGE.—Reconstruction of the English Bridge over the River Severn, for the T.C. Mr. A. W. Ward, Borough Surveyor, Guildhall, Shrewsbury. Deposit £50.

JULY 19.—**London.**—VARIOUS WORKS.—(a) Installation of internal automatic telephones at the River Hospitals, near Dartford; (b) installation of electric lighting in ward blocks, boiler house, &c., at the Grove Fever Hospital, Tooting, S.W.17; (c) installation of a continuous drying machine at the Southern Hospital, near Dartford, for the Metropolitan Asylums Board. Office of the Board, Embankment, E.C.4. Deposit £1.

JULY 19.—**St. Helens.**—RAILS, &C.—Supply to the T.C. of 800 tons of tram rails, fishplates, &c. Mr. A. W. Bradley, Borough Engineer, St. Helens.

JULY 21.—**Manchester.**—ISOLATING LINKS.—Supply and erection at the Oldham-road "B" Sub-station of isolating links in sheet-steel cubicles. Mr. F. E. Hughes, Secretary, Electricity Department, Town Hall, Manchester. Charge £1 1s.

JULY 22.—**Newport (Mon.).**—PIPES.—Supply of (1) 11,000 tons 25 ins. in diameter and a small quantity of lesser diameters; (2) 11,000 tons 25 and 19 ins. in diameter and a quantity of other sizes, to the T.C. Messrs. G. H. Hill & Sons (Westminster), 3, Victoria-street, Westminster. Deposit £2 each contract.

JULY 22.—**Newport (Mon.).**—VALVES, &C.—Supply of valves and miscellaneous ironwork; also small bridgework, for the T.C. Messrs. G. H. Hill & Sons (Westminster), 3, Victoria-street, Westminster. Deposit £2.

JULY 26.—**Newmarket.**—STEAM ROLLER.—Supply of 10-ton steam roller, with scarifier, for the R.D.C. Mr. S. J. Ennion, Clerk, Deva Chambers, Newmarket.

JULY 31.—**London.**—LIFTS.—Supply and erection of four electric lifts for the Tramways Central Repair Depôt, Charlton, S.E., for the L.C.C. Clerk, County Hall, Westminster Bridge, S.E.1. Deposit £2.

AUGUST 1.—**Dublin.**—PUMPS.—Supply and erection of two sets of electrically-driven sewage pumps, with auxiliary works, for the Ringsend Pumping Station. Mr. John S. Alfred, 11, Victoria-street, Westminster, S.W.1. Deposit £5 5s.

AUGUST 1.—**Siam.**—RAILWAY CARRIAGES.—For the supply of 25 underframes for bogie carriages, for the Department of State Railways. Messrs. C. P. Sandberg, 40, Grosvenor-gardens, S.W. 1. Charge £2.

OCTOBER 31.—**New South Wales.**—BRIDGE.—Construction of the superstructure and substructure of a cantilever bridge across Sydney Harbour from Dawes Point to Milson's Point, for the Government of New South Wales. Agent-General for New South Wales, Australia House, Strand, London, W.C. 2.

ROAD, SANITARY, AND WATER WORKS.

JULY 8.—**Barnes.**—ROADS.—Works of excavation, Palewell Common, for the U.D.C. Mr. G. Bruce Tomes, Surveyor, Council House, High-street, Mortlake, S.W.14.

JULY 8.—**Macclesfield.**—SEWAGE PLANT.—Supply and erection at Butley sewage disposal works of four revolving distributors, for the T.C. Mr. J. H. Edmondson, Sewage Manager, Prestbury, near Macclesfield.

JULY 10.—**Aldershot.**—ROADS.—Resurfacing of a portion of Station-road with creosoted deal blocks on a reinforced concrete foundation, for the T.C. Surveyor, Municipal Buildings, Aldershot.

JULY 10.—**Barnsley.**—ROADS.—For the making, &c., of Pye-avenue, Mapplewell, near Barnsley. Mr. F. W. Peckett, Carr House, Spark-lane, Mapplewell.

JULY 10.—**Derbyshire.**—ROAD WIDENING.—Widening the Derby-Chesterfield main road at Wingerworth, including the widening of Redleadmill Bridge, for the Derbyshire C.C. Mr. J. W. Horton, County Surveyor, County Offices, St. Mary's-gate, Derby. Deposit £2 2s.

JULY 10.—**Lancashire.**—CULVERT.—Construction of a culvert, together with the approach roads thereto, at Causey (Hundred) Bridge, near Warrington, for the Lancashire C.C. Mr. W. H. Schofield, County Surveyor, County Offices, Preston.

JULY 10.—**Llanfairfechan.**—WATER SUPPLY.—Construction of reservoir and laying water main, for the U.D.C. Surveyor, Offices, Llanfairfechan.

JULY 10.—**Wellington (Salop).**—SEWERAGE WORK.—For construction of sewers, for the U.D.C. Mr. G. H. Connor, Surveyor, Council Offices, Wellington. Deposit £5.

JULY 10.—**Whitehaven.**—SEWERS, &C.—For sewage outfall works, Thornhill housing scheme, for the R.D.C. Mr. Wilfrid J. Goode, Engineer, Union Hall, Whitehaven. Deposit £1 1s.

JULY 10.—**York.**—ROADS.—Making-up of Poppleton-road, for the T.C. Mr. F. W. Spurr, City Engineer, Guildhall, York. Deposit £1 1s.

JULY 11.—**Carlton.**—SEWERAGE WORKS.—For construction of Lower Netherfield Sewerage Works, for the U.D.C. Mr. Austin H. Elliott, Surveyor, Carlton, Nottingham. Deposit £4 4s.

JULY 11.—**Swansea.**—ROADS.—Widening and improvement of Crumlyn Burrows and Vale of Neath roads, for the T.C. Mr. J. Richard Heath, Borough Engineer, Guildhall, Swansea. Deposit £2 2s.

JULY 12.—**South Milford.**—SANITARY.—Laying on water supply and conversion of conveniences at South Milford Council School, for the West Riding E.C. Education Dept., County Hall, Wakefield.

JULY 12.—**Stoke-on-Trent.**—SANITARY.—Conversion into water-closets of 100 privy cesspools, in Burslem, for the T.C. Health Dept., St. Peter's-chambers, Glebe-street, Stoke-upon-Trent.

JULY 12.—**Twickenham.**—ROADS.—Surfacing of Cross Deep-road with asphalte macadam. Mr. F. W. Pearce, Surveyor, Town Hall, Twickenham.

JULY 12.—**West Riding of Yorkshire.**—ASPHALTING.—Repairs to tar asphalt playgrounds at the following schools: Brinsworth Council School, Stainland Bowling Green Council School, Lepton Council School, Heptonstall Colden Council School, New Mill Scholes Council School Education Dept., County Hall, Wakefield.

JULY 13.—**Barnstaple.**—ROADS.—Reconstruction of Mile-road as a reinforced concrete road, for the T.C. Borough Surveyor, Barnstaple. Deposit £2 2s.

JULY 14.—**Haslingden.**—ADDITIONS.—Additions to the works of the Haslingden, Rawtenstall and Bacup Outfall Sewerage Board. Mr. G. Midgley Taylor, 36, Victoria-street, Westminster, S.W. 1. Deposit £5

JULY 14.—**Leeds.**—ROADS.—For flagging, paving, and tar macadamising several private streets. Highways and Permanent Way Department, 1, Swinegate, Leeds.

JULY 14.—**Leyburn.**—WATER SUPPLY.—Sinking a borehole at Finghall, for the R.D.C. Mr. F. J. Rodwell, 37 and 38, Prudential Buildings, Leeds. Deposit £1 1s.

JULY 14.—**Sutton Bridge.**—ROAD.—Construction of a road at Wingland Grange Farm, Sutton Bridge, for the Holland C.C. Mr. E. J. A. Christie, County Land Agent, Sessions House, Boston.

JULY 14.—**Yorkshire.**—ROAD MATERIALS.—Supply to the West Riding Highways Committee of granite and whinstone, tarred and untarred slag, tarred and untarred limestone. Mr. F. L. Hubball, Commercial Manager, Highways Dept., County Hall, Wakefield.

JULY 15.—**York.**—SEWERS, &C.—Construction of about 600 yards of sewers and surface water drains, &c., in connection with their Housing Scheme at Heworth. Mr. F. W. Spurr, City Engineer, Guildhall, York. Deposit £1 1s.

JULY 17.—**Gellygaer.**—ROADS.—Completion of roads on housing sites. Mr. P. Jones Williams, Architect, Council Offices, Hengoed. Deposit £1 1s.

JULY 19.—**Northwich.**—SEWAGE WORKS.—Construction of Rudheath Sewage Disposal Works, for the R.D.C. Mr. John Birtwistle, Surveyor, Winnington-hill, Northwich. Deposit £2 2s.

JULY 20.—**Worcestershire.**—PAVING.—For granite sett paving on the Stourbridge-Halesowen main road and on the Lye-Dudley main road near Lye Cross, for the C.C. Mr. Chas. F. Gettings, 30, Foregate-street, Worcester. Deposit £1.

Competitions.

(*See Competition News, page* 4.)

Auction Sales, Tenders, etc.

JULY 10, 11 AND 12.—**Newbury, Berks.**—Mr. L. E Shergold, A.A.I., will sell at the Rockingham-road housing site, at 12 o'clock, building materials, plant, machinery, timber, &c. Auctioneer, Market-place, Newbury.

JULY 11.—**London, S.W. 1.**—Messrs. Rogers, Chapman & Thomas will sell on the premises, lease of the modern factory premises, 35, Bessborough-place, S.W. 1 (near Vauxhall Bridge), at present equipped with up-to-date machinery as a high-class woodwork factory. Auctioneers, 50, Belgrave-road, Westminster, S.W. 1.

JULY 11.—**Sussex.**—Messrs. Joseph Hibbard & Sons will sell, at Eartham Mill, Sussex, by order of the Controller, Board of Trade, Timber Disposal Department, saw mill plant, &c. Auctioneers, 15, Newington Green, Islington, London, N.16.

JULY 12.—**Pinner.**—Messrs. Cockett & Henderson will sell at the Parish Hall, Pinner, five minutes' walk from the village and station, freehold building land at Elm Park, suitable for private houses. Auctioneers, 100, Jermyn-street, St. James's, S.W.1.

★JULY 13.—**Golders Green, N.**—Mr. Wm. Hollis will sell at the rear of his office at Temple Fortune, Golders Green, building materials (Golders Green Tube Extension). Auctioneer, Church End, Finchley.

★JULY 18.—**London, S.E.**—Messrs. Veryard & Yates will sell, without reserve, to clear site, 1, The Glebe, Dog Kennel Hill, S.E., building materials from demolition of the residence. Auctioneers, 365, Norwood-road, S.E.27.

★JULY 19.—**Hammersmith.**—Nos. 199a and 201, King-street. Shop and factory property. Auctioneers, Messrs. Goddard & Smith, 22, King-street, St. James's, S.W.1.

JULY 19.—**London, E.C.**—Messrs. St. Quintin, Son & Stanley will let the following sites by auction: Nos. 47 to 57 (odd), Gresham-street, and 23 to 26, Wood-street, in the City of London, also by order of the City Lands Committee of the Corporation of the City of London, the highly important building site now occupied by premises known as Nos. 2 to 5 and 9 to 13, Fenchurch-buildings, in the City of London. Sale, Winchester House, Old Broad-street, E.C. Auctioneers, 50, Threadneedle-street, E.C.2.

★JULY 20.—**London, E.C.**—Messrs. Eisley & Sons will sell freehold building site comprising 16/25, Bastwick-street, also two freehold shops, 37 and 38, Bastwick-street, E.C., at Winchester House, Old Broad-street, at 2.30. Auctioneers, Chester House, Rotherhithe, S.E.16.

★JULY 20.—**Reading.**—Messrs. Elsworth & Knighton will sell at the Reading Chamber of Commerce (unless previously disposed of privately) the residence known as Caversham Burrows, near Reading, on the banks of the Thames. Auctioneers, 19, Exhibition-road, London, S.W.7.

★JULY 22.—**Shrewsbury.**—Messrs. Hall, Wateridge & Owen, Ltd., will sell, at the County Mart, the stone quarries at Grimshill, and machinery and plant on the property. Auctioneers, Shrewsbury.

★JULY 27.—**London, W.1.**—Messrs. Knight, Frank & Rutley will sell by auction the freehold estate, Claremont, Esher, Surrey, comprising mansion, ornamental grounds, home farm, bailiff's house, and cottage, timbered park about 300 acres, &c., the whole extending to an area of about 502 acres. Auctioneers, 20, Hanover-square, W.1.

★JULY 27.—**London, W.1.**—Messrs. Knight, Frank & Rutley will sell North End House, Hampstead, with grounds of two acres. Auctioneers, 20, Hanover-square, W.1.

★AUGUST 1.—**London, S.W.1.**—Messrs. Hampton & Sons will sell at the St. James' Estate Rooms, 20, St. James'-square, S.W.1, freehold residential and building properties in Edgware, Little Stanmore—about 10 acres and six extremely valuable building estates. Auctioneers, Hampton & Son, 20, St. James'-square, London, S.W.1.

WITHOUT RESERVE.—(So far as the great majority of the lots are concerned.) Sale of contractors' surplus plant and materials, July 11, Biggleswade. Auctioneers, Messrs. Goddard & Smith, 70, Seymour-place, W.1.

Public Appointments.

JULY 8.—**London, E.C.**—Temporary Civil Engineering Draughtsman, also Architectural Draughtsman, required by the Metropolitan Water Board. The Clerk to the Board, Metropolitan Water Board, 173, Rosebery-avenue, E.C.1.

★JULY 10.—**Brixton, S.W.**—Required by the L.C.C., September next, at the School of Building, Ferndale-road, Brixton (1) Visiting teacher of heating and ventilating, (2) Lecturer on the law of arbitration and the London Building Acts, each for one evening a week. Education Officer (T. 1a), County Hall, Westminster Bridge, S.E.1.

JULY 10.—**London, S.E.**—Required a whole time Teacher of painting and decorating by the L.C.C., at the School of Building, Ferndale-road, Brixton. Practical experience, including graining and marbling, essential. Education Officer (T.1a), The County Hall, Westminster Bridge, S.E. 1.

★JULY 11.—**Shoreditch, E.**—Sewer Foreman (competent) required by the Shoreditch Borough Council. Mr. J. A. D. Milne, Town Clerk, Shoreditch Town Hall, Old-street, E.C. 2.

★JULY 15.—**Aylesbury.**—Temporary Architectural Assistant required by Bucks County Council. Mr. C. H. Riley, County Architect, Education Sub-Office, Aylesbury.

★NO DATE.—**Kingston-upon-Thames.**—Instructor in building construction and building science required at the Technical Institute, Borough of Kingston-upon-Thames, for the evening classes, two or three evenings per week, for the session commencing September 25, 1922. Mr. H. T. Roberts, B.A., Principal, Kingston Hall-road, Kingston-upon-Thames.

NO DATE.—**Nigeria.**—Saw Mill Foreman (Junior) required by the Government of Nigeria for two tours of 12 to 18 months each. Crown Agents for the Colonies, 4, Millbank, S.W. 1.

TRADE NEWS.

Mr. Frederic Coleman, managing director of the Adamite Co., Ltd., Regent House, Regent-street, London, W.1, writes to inform us that "Colemanite" was used in the foundations of the new building which is being erected in Regent-street for Messrs. Edwards & Sons, and also in connection with the work to Walmer House, 288, Regent-street.

NEW COMPANIES.

THE particulars quoted below have been compiled by Messrs. Jordan & Sons, Ltd., Company Registration Agents, of 116 & 117, Chancery-lane, W.C.2, from the documents available at the Companies' Registry.

J. H. BARDSLEY, LTD. (180,613). Registered March 25. 17, St. Ann's-square, Manchester. Engineers, builders and contractors. Nominal capital, £15,000.

G. TUNNICLIFFE & CO., LTD. (180,637). Registered March 27. Builders and contractors, &c. Nominal capital, £5,000.

H. S. RENDELL & SONS, LTD. (180,642). Registered March 27. Hannah-street Works, Barry Dock. Builders and contractors. Nominal capital, £3,000.

CRAIG-LELO QUARRY CO., LTD. (180,655). Registered March 28. 40, Bennett's-hill, Birmingham. Nominal capital, £30,000.

WEBSTER & CO. (SHEFFIELD), LTD. (180,689). Registered March 28. Quarry owners and manufacturers of silica bricks, fire bricks, &c. Nominal capital, £30,000.

JOHN SUTCLIFFE & SONS (BUILDERS), LTD. (180,671). Registered March 28. Electric Saw Mills, Alexandra Drive, St. Anne's-on-the-Sea. Builders and contractors. Nominal capital, £10,000.

J. DIXON (LONDON), LTD. (180,709). Registered March 29. 3a, Lanark-place, Paddington, Middlesex. Builders and decorators. Nominal capital, £2,000.

F. J. MOORE, LTD. (180,754). Registered March 30. Cattedown, Plymouth. Quarry owners and lime and limestone merchants. Nominal capital, £25,000.

A. J. A. TAYLOR & CO., LTD. (180,738). Registered March 30. Derwent-road, Ealing, W. Builders and contractors. Nominal capital, £7,000.

WALKER'S PAINTS, LTD. (180,778). Registered March 30. 59, Wandsworth-road, Lambeth, S.W. Nominal capital, £2,500.

LONG, WHITE & CO., LTD. (180,766). Registered March 30. 41, North John-street, Liverpool. Builders and contractors. Nominal capital, £2,000.

WOODGRANGE TIMBER CO., LTD. (180,825). Registered March 31. Nominal capital, £1,000.

EAGLETON & COCKRANE, LTD. (180,792). Registered March 31. Ditton Quarries, East Malling, Kent. Quarry masters, stone merchants, &c. Nominal capital, £5,000.

J. & N. DICKINSON (1922), LTD. (180,804). Registered March 31. 37, St. George's-road, Bolton. Joiners, builders and contractors. Nominal capital, £3,000.

LEONARD HANN, LTD. (182,185). Registered May 31. 93, Bedford-hill, Balham, S.W. Builders, house decorators, architects, and surveyors. Nominal capital, £300.

STAGG BROS., LTD. (182,197). Registered May 31. Alexandra-road, Margate, Kent. Builders, contractors and decorators. Nominal capital, £2,000.

"OLD TOLL-GATE" WOOD STAIN CO., LTD. (180,813). Registered March 31. Manufacturers and dealers in wood stain and other products Nominal capital, £400.

WHITBYS, LTD. (180,848). Registered April 1. 28, Eagle-street, W.C. 1. Builders, joiners, decorators, contractors, &c. Nominal capital, £10,000.

STANDARD TIMBER TRADING CO., LTD. (180,876). Registered April 3. Wood-lane (opposite Stadium), Shepherd's Bush, W. Timber merchants, &c. Nominal capital, £1,000.

ARMITAGE & HODGSON, LTD. (180,883). Registered April 4. Camp-road Mills, Leeds. Builders and contractors. Nominal capital, £5,000.

J. E. JERVIS, LTD. (180,896). Registered April 4. Builders and contractors. Nominal capital, £5,000.

STREATHER ESTATES, LTD. (180,951). Registered April 5. 20, The Parade, Golders Green, Hendon, N.W. Builders and contractors. Nominal capital, £5,000.

PRICES CURRENT OF MATERIALS.*

[Owing to the exceptional circumstances which prevail at the present time, prices of materials should be confirmed by inquiry. Since our last issue several prices have been revised.—Ed.]

BRICKS, &c.

Per 1,000 Alongside, in River Thames up to London Bridge.

	£ s. d.
Best Stocks	4 2 0

Per 1000, Delivered at London Goods Stations.

	£ s. d.		£ s. d.
Flettons, at King's Cross	3 1 0	Best Blue Pressed Staffs.	10 1 6
Do. grooved for plaster	3 3 0	Do. Bullnose	10 11 6
Do. Bullnose	3 16 0	Blue Wire Cuts	8 1 6

Best Stourbridge Fire bricks:—

2½ in.	11 3 0	3 in.	13 2 0

GLAZED BRICKS—

Best White, Ivory, and Salt Glazed Stretchers	24 0 0	D'ble Str'tch'rs D'ble Headers One Side and two Ends	32 10 0 29 10 0 33 10 0
Headers	23 10 0	Two Sides and one End	34 10 0
Quoins, Bullnose and 4½in. Flats	30 10 0	Two Sides and Splays and Squints	32 0 0

Second Quality, £1 per 1,000 less than best. Cream and buff, £2 extra over white. Other colours, Hard Glaze, £5 10s. extra over white.

	s. d.		
Thames Ballast	13 6	per yard,	delivered 2 miles radius
Pit Sand	16 0	" "	
Thames Sand	16 6	" "	
Best Washed Sand	16 6	" "	
½ in. Shingle for Ferro-Concrete	14 0	" "	Paddington.
¼ in. "	15 0	" "	

Per ton delivered in London area in full van loads.

	£ s. d.		£ s. d.
Best Portland Cement British Standard Specification Test 56/- alongside at Vauxhall in 80-ton lots.	3 3 0		3 8 6
Ferrocrete per ton extra on above			10 0

NOTE.—The sacks are charged at 1s. 9d. each and credited at 1s. 6d. each if returned in good condition within three months, carriage paid.

Best Ground Blue Lias Lime 2 5 6 at rly. depot.
Grey Stone Lime 61s. 0d. per ton delivered in City and Central districts.
Stourbridge Fireclay in sacks 37s. 8d. per ton at rly. dpt.

STONE.

	s. d.
BATH STONE—delivered in railway trucks at Westbourne Park, Paddington, G.W.R., or South Lambeth, G.W.R., per ft. cube	3 1
Do. do. delivered in railway trucks at Nine Elms, L. & S.W.R., per ft. cube	3 4
Do. do. delivered on road wagons at Nine Elms Depot	3 5
PORTLAND STONE—Brown Whitbed, in random blocks of 20 ft. average, delivered in railway trucks at Nine Elms, L. & S.W.R., South Lambeth Station, G.W.R., and Westbourne Park, Paddington, G.W.R., per ft. cube	4 7
Do. do. delivered on road wagons at above stations, per ft. cube	4 8

White basebed, 3d. per ft. cube extra.

NOTE.—½d. ft. cube extra for every foot over 20 ft. *average*, and ½d. beyond 30 ft.

YORK STONE, BLUE—*Robin Hood Quality.*

	s. d.
Delivered at any Goods Station London.	
6 in. sawn two sides landings to sizes (under 30 ft. super.) Per Ft. Super	5 10½
6 in. rubbed two sides, ditto "	6 4½
3 in. sawn two sides slabs (random sizes) "	2 5½
2 in. to 2½ in. sawn one side slabs (random sizes) "	1 6½
1½ in. to 2 in. ditto, ditto "	1 4
HARD YORK— Delivered at any Goods Station London.	
Scappled random blocks Per Ft. Cube	6 0
6 in. sawn two sides landing to sizes (under 40ft. super.) Per Ft. Super	5 4½
6 in. rubbed two sides ditto "	6 0½
4 in. sawn twosides slabs (random sizes) "	2 10½
3 in. ditto, ditto "	2 5½
2 in. self-faced random flags Per Yard Super	8 4

WOOD.

GOOD BUILDING DEAL.

Inches	£ s.	
4 × 11	36 0	per standard
4 × 9	36 0	"
4 × 8	30 0	"
4 × 7	30 0	"
3 × 8	30 0	"
3 × 7	25 0	"
2½ × 7	22 10	"
3 × 6	22 10	"
3 × 11	35 0	"
2 × 11	35 0	"
3 × 9	35 0	"
2½ × 9	30 0	"
3 × 4½	20 10	"
3 × 4	20 10	"

PLANED BOARDS.

4 × 11	42 10	
1 × 9	37 10	"

PLAIN EDGE FLOORING.

Inches		
¾	20/-	per square
1	22/6	"
1	25/-	"
1¼	32/6	"
1½	44/-	"

TONGUED AND GROOVED FLOORING.

Inches		
1	25/-	per square
1¼	32/6	"
1½	44/-	"

WOOD (*Continued*).

MATCHINGS (BEST).

Inches		
¾	17/6	per square
¾	22/6	"
¾	25/-	"

BATTENS.

Inches	s. d.	
¾ × 2	3 0	per 100 ft.

SAWN LATHS.

Per bundle				0 4	0
Dry Wainscot Oak, per ft. super, as inch	0 2	6	to	0 3	0
¼ in. do.	0 1	10½	to	0 2	6
Dry Mahogany—Honduras, Tabasco, African, per ft. super, as inch	0 2	3	to	0 3	0
Cuba Mahogany	0 3	6	to	0 4	0
Teak (Rangoon, Moulmein or Java), per load	52 10	0	to	55 0	0
American Whitewood planks, per ft. cube	0 16	0	to	0 18	6
Best Scotch Glue, per cwt.	7 2	0	to	—	
Liquid Glue, per cwt.	4 18	0	to	6 0	0

SLATES.

1st quality slates from Bangor or Portmadoc in truck load delivered London area. Per 1,000 of 1,200.

	£ s. d.		£ s. d.
24 by 12	46 10 0	18 by 10	26 5 0
22 by 12	42 5 0	18 by 9	23 2 6
22 by 11	39 0 0	16 by 10	22 0 0
20 by 12	37 2 6	16 by 8	17 2 6
20 by 10	31 15 0		

TILES.

	Per 1,000 f.o.r. London. £ s. d.
Best machine-made tiles from Broseley or Staffordshire district	6 0 0
Ditto hand-made ditto	8 10 0
Ornamental ditto	6 15 0
Hip and valley tiles (per dozen) Hand made	0 8 6
Hip and valley tiles (per dozen) Machine made	0 8 0

METALS.

JOISTS, GIRDERS, &c., TO LONDON STATION PER TON—

	£ s. d.
R. S. Joists, cut and fitted	14 0 0
Plain Compound Girders	16 0 0
" Stanchions	18 0 0
" In Roof Work	21 0 0

WROUGHT IRON TUBES AND FITTINGS—

(Discount off List for lot of not less than £15 net value delivered direct from Works. 5 per cent. less above gross discounts, carriage forward if sent from London Stocks.)

(all sizes).	Tubes. Up to 2".	Fittings. Over 2".	Up to 2".	Flanges. Over 2"
Gas	55 %	50 %	60 %	65 %
Water	50 %	45 %	55 %	60 %
Steam	45 %	40 %	50 %	55 %
Galv'd—				
Gas	45 %	42½ %	52½ %	57½ %
Water	37½ %	42½ %	47½ %	52½ %
Steam	27½ %	32½ %	42½ %	47½ %

L.C.C. COATED SOIL PIPES—London Prices ex works.

	Pipe. s. d.	Bends, stock angles. s. d.	Branches, stock angles. s. d.
2 in. per yd. in 6ft. plain	3 7½	3 0	3 7
2½ in. "	4 4	3 3	4 0
3 in. "	5 1½	3 7	5 5
3½ in. "	5 7½	4 6	6 4
4 in. "	6 4½	5 1	7 3

RAIN-WATER PIPES, &c.

	Pipe. s. d.	Bends, stock angles. s. d.	Branches, stock angles. s. d.
2 in. per yd. in 6ft. plain	2 1	1 7½	2 2½
2½ in. "	2 3½	1 10½	2 7½
3 in. "	2 9	2 4	3 6
3½ in. "	3 3	2 9½	4 1
4 in. "	3 8	3 4½	4 11½

L.C.C. DRAIN PIPES.—9 ft. lengths. London Prices per yd.: 4 in., 5/11. .. 5 in., 7/-. .. 6 in., 8/6.

IRON—	Per ton in London. £ s. d.		£ s. d.
Common Bars	13 0 0	to	14 0 0
Staffordshire Crown Bars—good merchant quality	14 0 0	..	15 0 0
Staffordshire "Marked Bars"	16 0 0	..	17 0 0
Mild Steel Bars	12 0 0	..	13 0 0
Steel Bars, Ferro-Concrete quality, basis price	12 0 0	..	13 0 0
Hoop Iron, basis price	15 0 0	..	16 0 0
" Galvanised	29 0 0	..	31 0 0
Soft Steel Sheets, Black—Ordinary sizes to 20 g.	14 0 0	..	15 0 0
" " " 24 g.	15 0 0	..	16 0 0
" " " 26 g.	16 10 0	..	18 10 0
Sheets Flat Best Soft Steel, C.R. & C.A. quality—Ordinary sizes, 6ft. by 2ft. to 3ft. to 20 g.	21 0 0	..	22 0 0
Ordinary sizes, 6ft. by 2ft. to 3ft. to 22 g. and 24 g.	22 0 0	..	23 0 0
Ordinary sizes, 6ft. by 2ft. to 3ft. to 26 g.	24 0 0	..	26 0 0
Flat and Galvanised Corrugated Sheets—Ordinary sizes, 6 ft. to 9ft. 20 g.	20 0 0	..	21 0 0
Ordinary sizes, 6ft. to 9ft. 22 g. and 24 g.	20 10 0	..	21 10 0
Ordinary sizes, 6ft. to 9ft. 26 g.	22 10 0	..	23 10 0

METALS (*Continued*).

	Per ton in London. £ s. d.		£ s. d.
Sheets Galvanised Flat, Best quality—Best Soft Steel Sheets, 6ft. by 2ft. to 3ft. to 20g. and thicker	24 0 0	..	25 0 0
Best Soft Steel Sheets, 22 g. and 24 g.	25 0 0	..	26 0 0
Best Soft Steel Sheets, 26 g.	26 10 0	..	27 10 0
Cut Nails, 3in. to 6in. (under 3in. usual trade extras.)	23 0 0	..	24 0 0

METAL WINDOWS—Standard sizes suitable for complete houses, including all fittings, painting two coats, and delivery to job, average price about 1/7 to 1/10 per foot super.

LEAD, &c.

	Delivered in London. £ s. d.		£ s. d.
LEAD—Sheet, English, 4 lb. and up	36 0 0	—	—
Pipe in coils	36 10 0	..	—
Soil Pipe	39 0 0	..	—
Compo pipe	40 0 0	..	—

NOTE—Country delivery, 30s. per ton extra; lots under 5 cwt., 1s. 6d. per cwt. extra. Cut to sizes, 2s. cwt. extra.

Old lead, ex London area, at Mills per ton	22 0 0	..	—
Do., ex country, carriage forward per ton	23 0 0	—	—
COPPER— Strong Sheet per lb.	0 2 3	—	—
Thin "	0 2 4	..	—
Copper nails "	0 2 3	..	—
Copper wire "	0 2 4	—	—
TIN—English Ingots "	0 1 9	..	—
SOLDER—Plumbers' "	0 0 10	..	—
Tinmen's "	0 1 0	..	—
Blowpipe "	0 1 3	..	—

GLASS.

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES AND IN SQUARES IN ORDINARY SIZES.

	Per Ft.		Per Ft.
15 oz. fourths	3½d.	32 oz. fourths	8½d.
" thirds	4½d.	" thirds	10d.
21 " fourths	5½d.	Obscured Sheet, 15 oz.	4½d.
" thirds	6d.	21 "	7d.
26 " fourths	6½d.	Fluted and Enamelled 15 "	8½d.
" thirds	7½d.	21 "	10½d.

Extra price according to size and substance for squares cut from stock.

ENGLISH ROLLED PLATE IN CRATES OF STOCK SIZES.

	Per Ft.
¼ Rolled plate	4½d.
⅜ Rough rolled	6d.
½ Rough rolled	6½d.
Figured Rolled, Oxford Rolled, Baltic, Oceanic, Arctic, Stippolyte, and small and large Flemish white	7d.
Ditto, tinted	9½d.
Rolled Sheet	6d.
White Rolled Cathedral	5½d.
Tinted do.	7½d.

Cast Plate is same price as rough rolled.

PAINTS, &c.

		£ s. d.
Raw Linseed Oil	in pipes per gallon	0 4 4
" " "	in barrels "	0 4 5
" " "	in drums "	0 4 7
Boiled " "	in barrels "	0 4 9
" " "	in drums "	0 4 11
Turpentine	in barrels "	0 0 10
"	in drums (10 gall.) "	0 10 1
Genuine Ground English White Lead, per ton (in not less than 5 cwt. casks.)		54 15 0

GENUINE WHITE LEAD PAINT—"Father Thames," "Nine Elms," "Park," "Supremus" and other best brands (in 14 lb. tins) not less than 5 cwt. lots per ton delivered 75 5 0
Red Lead, Dry (packages extra) per ton 38 0 0
Best Linseed Oil Putty per cwt. 0 17 0
Flicoal per cwt. 0 15 6
Size. X D Quality fkn. 0 4 6

VARNISHES, &c.

	Per gallon. £ s. d.
Oak Varnish Outside	0 14 0
Fine ditto ditto	0 16 0
Fine Copal ditto	0 18 0
Pale Copal ditto	1 0 0
Pale Copal Carriage ditto	1 4 0
Best ditto ditto	1 12 0
Floor Varnish Inside	0 18 0
Fine Pale Paper ditto	0 18 0
Fine Copal Cabinet ditto	1 2 6
Fine Copal flatting ditto	1 0 6
Hard drying Oak ditto	0 18 0
Fine Hard drying Oak ditto	0 19 6
Fine Copal Varnish ditto	1 0 0
Pale ditto ditto	1 2 0
Best ditto ditto	1 12 0
Best Japan Gold Size	0 12 0
Best Black Japan	0 14 0
Oak and Mahogany Stain (water)	0 12 0
Brunswick Black	0 9 0
Berlin Black	0 14 0
Knotting (patent)	0 5 0
French and Brush Polish	1 2 6
Liquid Dryers in Terebine	0 12 6
Cuirass Black Enamel	0 7 0

* The information given on this page has been specially compiled for THE BUILDER and is corrected to date. Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the highest or lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

CURRENT PRICES FOR BUILDING WORK IN LONDON.*

EXCAVATOR.

		s.	d.
Digging and throwing or wheeling and filling carts, and carting away to shoot—6 ft. deep	per yard cube	15	0
Add if in clay	" "	1	6
Add for every additional depth of 6 ft.	" "	0	9
Planking and strutting to trenches	per foot super	0	7
Do. to sides of excavation, including shoring	" "	1	2

CONCRETOR.

Portland cement concrete in foundation 1 to 6	per yard cube	40	0
Add if in underpinning in short lengths	" "	9	0
Add if in floors 6 in. thick	" "	3	9
Add if in beams	" "	4	6
Add if aggregate 1 : 2 : 4	" "	11	0
Add for hoisting not exceeding 10 ft. beyond the first 10 ft.	" "	3	6

BRICKLAYER.

		£	s.	d.
Reduced brickwork in lime mortar and Fletton bricks	per rod	36	0	0
Add if in stocks	"	8	10	0
Add if in Staffordshire blues	"	25	10	0
Add if in Portland cement and sand	"	3	10	0

FACINGS.

Extra for facing in English or Flemish bond for every 10s. per 1,000 over the price of the common bricks	per ft. super	0	0	1½

POINTING.

Neat flat strucks or weathered joint	" "	0	0	3

ARCHES.

Extra only to the price of ordinary brickwork :—

Fair external in half brick rings	" "	0	0	10
Axed in stocks	" "	0	1	9
Rubbed and gauged jointed in putty camber or segmental	" "	0	6	0

SUNDRIES.

Damp course in double course of slates breaking joint and bedded in Portland cement	" "	0	1	3
Setting ordinary register grates and stoves	each	1	1	0
Setting kitchener, including forming flues, &c., with all necessary fire bricks	"	5	5	0

ASPHALTER.

		s.	d.
Half-inch horizontal damp course	per yard sup.	7	6
Three-quarter-inch vertical damp course	" "	11	0
½ inch on flats in two thicknesses	" "	8	6
Angle fillet	per foot run	0	3
Skirting and fillet 6 in. high	" "	1	4

MASON.

		s.	d.
York stone templates fixed	per foot cube	16	3
York stone sills fixed	" "	28	6
Bath stone and all labour fixed	" "	15	0
Portland stone fixed	" "	22	0

SLATER.

Welsh 16 in. × 8 in. 3 in. lap, including nails	per square	79	9
Do. 20 in. × 10 in. Do. Do.	"	90	9
Do. 24 in. × 12 in. Do. Do.	"	99	0

CARPENTER AND JOINER.

Fir framed in plates	per foot cube	5	9
Do. joists	" "	6	9
Do. roofs, floors and partitions	" "	6	9
Do. trusses	" "	8	6

		¾"	1"	1¼"	2"
Deal rough close boarding	per sq.	42/-	48/-	55/-	85/-

		s.	d.
Flat centering for concrete floor, including struts or hangers	"	60	0
Do. to beams	per ft. sup.	1	6
Centres for arches	"	2	0
Gutter boards and bearers	"	1	3

FLOORING.		¾"	1"	1¼"	1½"
Deal-edges shot	per sq.		49/-	58/-	67/-
Do. tongued and grooved	"		54/-	65/-	72/-
Do. matchings	"	45/-	55/-		
Moulded skirting, including backings and grounds	per ft. sup.	1/8	2/1	2/3	2/9

SASHES AND FRAMES.		s.	d.
One-and-a-half moulded sashes or casements	per foot super	1	10
Two Do. Do. Do.	" "	2	3
Add for fitting and fixing	"	0	6
Deal-cased frames with 1 in. inner and outer linings, 1¼ in. pulley stiles tongued to linings, hard wood sills with 2 in. moulded sashes in squares double hung, double hung with pulleys, lines and weights ; average size	" "	4	1

DOORS.		1½"	1¾"	2"
Two-panel square framed	per ft. sup.	2/4	2/7	2/9
Four-panel Do.	"	2/8	3/0	3/3
Two-panel moulded both sides	"	3/0	3/3	3/6
Four-panel Do. Do.	"	3/3	3/7	3/10

CARPENTER AND JOINER—continued.

FRAMES.		s.	d.
Deal wrot moulded and rebated	per foot cube	14	6

		1"	1¼"	1½"
Plain deal jamb linings framed	per ft. sup.	1/9	1/10	2/1
Deal shelves and bearers	"	1/6	1/8	1/11
Add if cross tongued	"	21.	2d	2/

STAIRCASES.	1"	1¼"	1½"	2"	2½"
Deal treads and risers in and including rough brackets	2/1	2/4	2/9	—	—
Deal strings wrot on both sides and framed	1/8	2/-	2 2	2/8	—

		s.	d.
Housings for steps and risers	each	0	11
Deal balusters, 1 in. × 1¼ in.	per ft. run.	0	9
Mahogany handrail ; average 3 in. × 3 in.	" "	6	0
Add if ramped	" "	11	10
Add if wreathed	" "	23	9

FIXING ONLY IRONMONGERY (INCLUDING SCREWS).

6 in. barrel bolts	8½d.	Rim locks	2/4
Sash fasteners	11½d.	Mortice locks	5/3
Casement fasteners	1/5	Patent spring hinges and letting in to floor and making good	19/-
Casement stays	1/2		
Cupboard locks	1/5		

FOUNDER AND SMITH.

		s.	d.
Rolled steel joists	per cwt.	19	0
Plain compound girders	"	22	0
Do. stanchions	"	25	0
In roof work	"	30	0

RAIN-WATER GOODS.

		3"	4"	5"	6"
Half-round plain rebated joints	ft. run	1/11	2/4½	3/7	4/-
Ogee Do. Do.	"	2/4½	3/1	3/10	4/9
Rain-water pipes with ears	"	2/9	3/7		
Extra for shoes and bends	each	4/4	5/11		
Do. stopped ends	"	1/11	2/4½	3/7	4/-
Do. nozzles for inlets	"	2/2	2/7	3/10	4/3

PLUMBER.

		s.	d.
Milled lead and laying in flashings and gutters	per cwt.	56	0
Do. Do. in flats	"	52	0
Extra labour and solder in coated cesspools	each	7	4
Welt joint	per ft. run.	0	6
Soldered seam	" "	1	10
Copper nailing	" "	0	7

		½"	¾"	1"	1½"	2"	4"
Drawn lead waste	per ft. run	10d.	1/6	1/9	3/1	3/10	
Do. service	"	1/5	1/11	2/3	3/6		
Do. soil	"						6/2
Bends in lead pipe	each					3/3	8/2
Soldered stop ends	"	1/2	1/8	2/1	2/10	3/6	
Red lead joints	"	11d.	1/-	1/3	1/11	2/4	4/10
Wiped soldered joints	"	2/10	3/6	4/-	4/11	6/6	9/9
Lead traps and cleaning screws	"				14/7	19/6	
Bib cocks and joints	"	6/4	9/7	15/4	41/-		
Stop cocks and joints	"	15/4	17/2	25/8	64/-		

PLASTERER.

		s.	d.
Render, float and set in lime and hair	per yard sup.	3	0
Do. Do. Sirapite	" "	3	2
Do. Do. Keen's	" "	4	4
Add sawn lathing	" "	1	7
Add metal lathing	" "	2	10
Portland cement screed	" "	2	9
Do. plain face	" "	4	4
Mouldings in plaster	per 1 girth	0	3
One-and-a-half granolithic pavings	per yard sup.	6	4

GLAZIER.

		s.	d.
21 oz. sheet plain	per foot sup.	1	1
26 oz. Do.	" "	1	4
Obscured sheet	" "	1	8
⅛ in. rolled plate	" "	1	0
¼ in. rough rolled or cast plate	" "	1	1
¼ in. wired cast plate	" "	1	7

PAINTER.

		s.	d.
Preparing and distempering, 2 coats	per yard sup.	1	0
Knotting and priming	" "	0	8
Plain painting 1 coat	" "	0	11
Do. 2 coats	" "	1	7
Do. 3 coats	" "	2	4
Do. 4 coats	" "	3	0
Graining	" "	2	5
Varnishing twice	" "	1	11
Sizing	" "	0	[illegible]
Flatting	" "	0	[illegible]
Enamel	" "	1	3
Wax polishing	per foot sup.	0	9
French polishing	" "	1	3
Preparing for and hanging paper	per piece	2/- to 4/-	

* These prices apply to new buildings only. They cover superintendence by foreman and carry a profit of 10% on the prime cost without establishment charges. A percentage of 1½ should be added for Employers' Liability and National Health and Unemployment Acts and from 1s. 6d. per £100 for Fire Insurance. The whole of the information given on this page is copyright.

PROPOSED NEW BUILDINGS & OTHER WORKS.*

In these lists care is taken to ensure the accuracy of the information given, but it may occasionally happen that, owing to building owners taking the responsibility of commencing work before plans are finally approved by the local authorities, "proposed" works at the time of publication have been actually commenced. Abbreviations:—T.C. for Town Council; U.D.C. for Urban District Council; R.D.C for Rural District Council: E.C. for Education Committee; B.G. for Board of Guardians; L.C.C. for London County Council; B.C. for Borough Council; and P.C. for Parish Council.

ASKERN.—It has been decided to proceed with the erection of new vestries at St. Peter's Church, and to remove the organ from the west end of the church to the chancel, in order to provide more accommodation for the growing population. Plans for the extensions have been prepared by Mr. E. T. Fox, architect, Barnby Dun.

BATH.—Plans passed: Cloak-room, &c., Ormond House, Weston-road; plant house, 109, Newbridge-road; shop front, &c., 11, Westgate-street; conversion into flats, 98, Sydney-place; additions, Lilac Cottage, Clarendon-road; bathroom, 10, Dunsford-place; pantry, 6, Bathwick-hill; bungalow, Sladebrook-road; conservatory, garage, &c., Collins House, Bathwich-hill; alterations, 17, Old Bond-street and 7, Trim-street; nurses' hostel and laboratory, 7, Bath-street; garage, 8, Albion-place and Norfolk-terrace; alterations, Lambridge Lodge, St. Saviour's-road.

BECONTREE.—In view of the building developments of the L.C.C., the Essex E.C. is considering arrangements for a new school.

BIGGLESWADE.—Plans passed by R.D.C.: House, The Green, Stotfold, for Mr. L. Gentle; store house, Sandy, for Messrs. W. Jordan & Son; bungalow, Henlow, for Mr. H. F. Fletcher.

BIRMINGHAM.—An exhibition is to be held next year at Birmingham. The site, at Edgbaston, comprises about seventy-two acres, and spacious halls for the various groups of exhibits are to be built of lasting materials, these including a large winter hall affording facilities for holding many of the city's yearly exhibitions. There will also be a large stadium and sports ground, and a welcome club, the intention of the organisers being to provide a permanent place for exhibitions.

BRAMPTON.—Plans passed by R.D.C. Messrs. D. G. Somerville & Co., Newcastle, for a house on the Red Beck Estate, Gilsland, for Mr. J. G. Thomlinson.

BRIDLINGTON.—Plans passed by T.C.: Messrs. Blackmore & Sykes, house, Cardigan-road, for Mr. T. Redhead; Messrs. Blackmore & Sykes, house, Cardigan road, for Mr. F. Usher; Mr. J. Hudson, additions to workshop in Westmoreland-grove, for Mr. J. H. Hudson; Mr. H. Musk, house, Carr-lane (Sands-lane), for Mrs. B. Brown; Messrs. Waite & Vaux, drainage, 22 & 23, Prince-street, for the Blue Bird Cafe Co., Ltd.; Mr. M. B. Parkin, house, Lamplugh-road, for Mr. B. Crowther; Mr. E. V. King, porch, "Newbold Lodge," St. James's-road, for Mr. E. V. King.

BRIGHTON.—A special committee of the T.C. is recommending the acceptance of an offer by the South Down Motor Services, Ltd., to lease the Aquarium site, for reconstruction and conversion to a garage.

CANVEY ISLAND.—The Essex E.C. has been presented with a site for a school by Mr. Chambers.

CARDIFF.—The Education Committee has instructed the city engineer to prepare block plans for an elementary school at Mynachdy, and for a secondary school at Grangetown.

CHISLEHURST.—Plans passed by U.D.C.: House, Holbrook-lane, for Mr. C. Tindall.

CLACTON.—The Essex E.C. has decided to adhere to its resolution to erect a secondary school.

COSHAM.—Messrs. John Croad & Sons, Portsea, have been instructed to proceed with the restoration of the tower of Wymering Church.

COVENTRY.—Plans passed by T.C.: Additional storey to mess room, Foleshill-road, for Messrs. Courtauld, Ltd.; class room, Webster-street, for the Trustees of the Webster-street Baptist Church; picture theatre (amended), Albany-road, for Mr. A. W. Pell; sub-station, Warden's-garden, Barrack-square, for the Corporation Electricity Department; motor store, Park street, for Mr. T. W. Roulston; lock-up shops, rear of 677, Foleshill-road, for Mrs. A. Woodfield; two houses, with shops, Harefield-road, for Mr. George Claridge; house, St. Nicholas-street, for Messrs. Cross & Co.; house, Stratford-street, for Mr. H. J. Emery; workshop, Wyley-road, for Mr. R. J. Newman; shop front, "St. Elmo," Radford-road, for Mr. F. Major.

DONCASTER.—The Doncaster Infirmary Committee have decided to purchase eight acres of land, with an additional three acres if required, on the south side of Thorne-road, on which to erect a new infirmary.

DUNDEE.—Plans passed: Bingham-terrace, piggery, for Messrs. Shiell & Small; Esplanade, workshops, for the Scottish Oil Agency, Ltd.; Hazel-drive, alterations and additions, for William M. Philip; Kingsway, dwelling houses, for the Dundee Garden City Association, Ltd.; Lammerton-terrace, dwelling house, for J. K. Anderson; Magdalen-place, garage, for Eugene Grant; mains road, garage and store, for Peter Gray; Perth-road, extension for the Fernbrae Nursing Home, Ltd.; strips of Craigie-road, additions to dwelling-house, for Godfrey Shepherd; Wellgate, alterations, for Messrs. Greenless & Sons.

EAST BARNET VALLEY.—Plans passed by U.D.C.: Four houses in Cedar-avenue, for Mr. E. H. Thompson; additions to Blair Hyrne, the Crescent, for Mr. Graham Wallis; additions to "Newlyn," Capel-road, for Mr. T. C. Fairweather; and a gardener's cottage, Hadley Lodge, Hadley Common, for Mr. Yorke-Long.

EDINBURGH.—At the last meeting of the Dean of Guild Court, the chief petitions granted were: For a garage at 6, Gordon-terrace; alterations and additions to 20, Merchiston-place; organ chamber, vestry, session-room, &c., at Melville-street Church, Portobello; baptistery at St. James' Episcopal Church, Inverleith-row; reconstruction, formation of garage and stores, &c., at Cromwell-street, Leith; extension of the Women Students' Union, George-square.

EPSOM.—Plans passed by R.D.C.: Additions to "Lynton," The Avenue, Tadworth, for Mr. J. Elsmie; additions to billiard room at "Greenhayes," for Mr. J. B. Crompton; house at Epsom-lane, Tadworth, for Mr. C. W. Kinge; two cottages at St. Monica's-road, Burgh Heath, for Mr. H. C. Hambro.

GLASGOW.—Another step towards the clearing of the slums in Glasgow was taken last week, when the Housing and General Town-planning Improvement Committee approved of a recommendation by the General Special Committee on Slum Areas to erect two and three apartment houses on ground acquired some time ago at Newbank, near Belvedere Hospital. Hospital. The decision is in pursuance of the Corporation's scheme to erect dwellings for the accommodation of tenants who will be dispossessed of their houses when the slum properties are demolished. There are almost 9½ acres of ground owned by the Corporation at Newbank, and the scheme will provide for some 200 new houses.

HAMILTON.—At a sitting of this Court plans presented by the T.C. were passed for the erection of fifty-two houses on the site at Morris-street and Downie-street, being part of the burgh's housing scheme. The other plans passed included the reconstruction of existing premises in Cadzow-street into a baker's shop and tea-room, and the alteration of the County Council buildings in Beckford-street to provide additional office accommodation for the Council.

HENDON.—The District Council has instructed the surveyor to report upon the suggestion made in a letter from Mr. L. G. Allum, which appeared in *The Times*, suggesting the provision of an open-air bath now that a diversion of the Brent at Hendon is being made.

HIGH WYCOMBE.—Extension of chair factory for Messrs. Castle Bros.; additions to offices for Messrs. H. Goodearl & Sons; additions to factory, for Mr. H. W. Garland.

ILKLEY.—The application of the U.D.C. for sanction to borrow £7,000 for the carrying out of extensions and improvements to their sewage disposal works has formed the subject of an inquiry conducted by Mr. G. Weekes, an inspector of the Ministry of Health.

LIVERPOOL.—Another stage in the direction of completing the Liverpool Gladstone Dock scheme was reached last week, when the Mersey Docks and Harbour Board instructed the engineer to proceed with shed and other constructional work, to cost about £800,000. The total cost of the scheme is estimated at several million pounds.

LONDON.—The Ministry of Health has informed the Metropolitan Asylums Board that it is prepared to sanction the borrowing of £26,000 for the adaptation of the Eastern Hospital premises.—Repairs to the roofs and walls at the Southern Hospital are to be carried out at an estimated cost of £1,350.

LONDON (HACKNEY).—The B.C. proposes to expend £36,400 on the reconstruction of certain roads, conditional on a contribution from the Ministry of Transport.——Plans passed by B.C.: Two lock-up shops, Dalston lane, for Mr. C. Farthing; drainage, 186, Well-street, for Messrs. J. Timmins & Son; oil depot, Waterden-road, for Messrs. G. Parker & Sons; sanitary works, West Hackney Schools, for Messrs. S. Goodall & Son; garage, 140, Kingsland High-street, for Mr. S. Bluston; addition, 94, Glyn-road, for Messrs. G. Streeter & Son.

LONDON (HAMMERSMITH).—Drainage plans passed by B.C.: At 19, Black Lion-lane, for Messrs. W. Chapman & Sons; at 31, Greenside-road, for Mr. G. Burgess; at 17, Redmore-road, for Mr. C. Carter; at 20, Leysfield-road, for Messrs. W. Allen & Sons; at 108, King-street, for Messrs. Bomer & Gibbs; at Palais de Danse, Brook Green-road, for Roberson, Ltd.; at Parochial Hall, Sulgrave-road, for Mr. R. W. Carden; at 68, Gayford-road, for Mr. J. Herring; at 51, Granville-gardens, for Mr. R. J. Harmon.

LONDON (ST. PANCRAS).—It is proposed to remodel he King's-road generating station at an estimated, cost of £3,200.

LONDON (SOUTHWARK).—Drainage plans passed by B.C.: By Oxo, Ltd., to 42, Bankside; Mr. Blaiberg, to 167, Borough High-street; Messrs. Firminger & Co., to 46 A, Brandon-street.

LONDON (WANDSWORTH).—Plans passed by B.C.: Mr. G. Barker, lavatory accommodation at Messrs. Spalding's factory, Deodar-road, Putney; Messrs. W. F. Ferne & Sons, re-drainage of Wesleyan Church, Upper Richmond-road, Putney; Mr. E. Plummer, re-drainage of 145-150, Elmhurst Mansions, Edgeley-road, Clapham North; Mr. P. Bleines, garages and workshops, Wilna-yard, Wilna-road, Springfield; Mr. F. Denyer, re-drainage, 54, 56 & 58, Bowland-road, Clapham South; Mr. E. H. Bullock, garage and addition at 24, Woodborough-road, Putney; Messrs. J. Chubb & Co., garages, 181, Brixton-hill, Streatham; Messrs. Holloway Bros. (London), Ltd. (1) Anchor Mission Institute, Garratt-lane, Springfield; (2) drains, Upper Grove House, Rochampton-lane, Putney; Mr. W. Harris, house, 41, Chartfield-avenue, Putney; Mr. R. E. Tidman, re-drainage of 110, Southville, Clapham North; Mr. W. J. Sidey, re-drainage of 23 & 25, Endlesham-road, Balham; Mr. R. J. Santer, re-drainage of 65, 67 & 69, Lacy-road, Putney; Mr. R. Sharp, re-drainage of 99, Clapham Common South Side Clapham South; Mr. D. G. Streeter, re-drainage of 66 & 68, Cheriton-square, Balham; Mr. F. E. Stratton, additions, 184, Balham High-road; Mr. H. V. Milnes Emerson, fifteen shops in Upper Tooting-road (Bell Estate); Messrs. Mott, Hay & Anderson, for construction of underground station, subway and conveniences at the junction of Clapham Common South Side and the Pavement; Mr. A. G. Mackay, garage, Westcombe Lodge, Wimbledon Park Side, Southfield; Messrs. R. Bilham & Son, nine houses, Penistone-road, Streatham; Mr. C. S. Kimpton, addition, 82, Wimbledon Park-road, Southfield; Mr. B. A. Whitcher, garage, 80, Elmbourne-road, Balham; Mr. G. Hill, two houses, Streatham Common North; Messrs. W. L. Cook & Co., Ltd.; garage, 14, Thornton-avenue, Streatham; Messrs. T. H. Adamson & Sons, addition to sixth Church of Christ Scientists, Chelverton Hall, Chelverton-road, Putney; Messrs. Holloways' Properties, Ltd., re-drainage of 11, Routh-road, Springfield; Messrs. Stitson, White & Co., additions, "Uplands," 100, Leigham Court-road, Streatham; "Vacuum Oil Co." Ltd., laboratory, Gargoyle Wharf, York-road, Fairfield" Messrs. Davis, Bennett & Co., re-drainage of 77, King's-avenue, Clapham South.

LONG EATON.—The U.D.C. has decided to erect eighteen additional houses.

MIDDLESBROUGH.—The sixteen sets of plans laid before the Plans' Committee at its last meeting included those of two houses in Tavistock-street and two bungalows in Daleston-avenue.

NORTHAMPTON.—Plans passed by the T.C.: Institute, Commercial-street, for the Deacons, Commercial-street Congregational Church; house, Kingsthorpe-grove, for Mr. Sharman; eight houses, Boughton-road, for Messrs. A. L. & H. W. Chown; 4 houses, Billing-road, for Messrs. H. Martin, Ltd.; class room, Lea-road, for the Trustees, Adnitt-road Baptist Chapel; bedroom, 55, Campbell-street, by Mr. Frost; conveniences, 12 and 14, Wood-street; garage, Birchfield-road, and garage, 39, Abington-street, for Messrs. A. R. & W. Cleaver, Ltd.; house, Weston-road, for Mr. J. Archer; shed, Barrack-road, for Mr. W. A. Tinsley; alterations to premises, 53, St. Leonard's-road, for Mr. P. Harrold; house, Woodland-avenue, for Messrs. A. Glenn & Sons; wash-house, 48, Cedar-road, for Mr. W. H. Frost.

PETERSFIELD.—The U.D.C. has passed plans for two houses in King George's-avenue, for the Board of Guardians.—The Ministry of Health is to be asked if it will be prepared to sanction a scheme for electric lighting.

PRESTON.—Plans passed by T.C.: D. Ainsworth bungalow, Lambert-road; J. & W. Bowman, stable Marsh-lane; W. Threlfall, house and shop, Ribbleton-avenue; W. D. T. Munford, for Edmunds & McCourty, alterations, 5, Friargate; T. Bradley, office, Eccles-street; J. Nightingale, house, St. Andrew's-avenue; G. H. & A. M. Barrowcliffe, alterations, 27, Market-place; Wilson & Peat, two motor sheds, Tunbridge-street; S. Stokes, garage, New Hall-lane; M. Myres, house and two bungalows, Southern-parade; J. H. Andrew, new streets, off Ribbleton-avenue; J. H. & W. C. Managan, office and two houses, Arterial-road, Holme Slack; J. H. & W. C. Mangan, store room, Blue Bell-place, Church-street; J. H. & W. C. Mangan, alterations and additions, Victoria and Station Hotel, Fishergate; B. D. Holmes; shop front, 121, North-road; J. W. Grange, four bungalows, Lytham-road; W. D. T. Munford; house, Powis-road; E. Heaney, billiard hall, Ribbleton-lane; W. G. Crosthwaite, shop front, 209, Ribbleton-lane; R. Cooper & Sons, house, off London-road; J. Millar, alterations and additions, First avenue; G. Carter, additions to garage, Somerset-avenue, New Hall-lane; J. T. Norris, workshop, Well-field road.

ROMFORD.—The R.D.C. has decided to borrow a further £12,000 for the purpose of erecting houses.

ROTHERHAM.—Plans passed by the R.D.C.: House and shop in Green Arbour-road, Thurcroft, for Mr. A. Dinsdale; house and shop in Green Arbour-road, Thurcroft, for Mr. W. Taylor; house and two shops in Green Arbour-road, Thurcroft, for Mr. T. Hogg.

RUGBY.—Plans passed by U.D.C.: House in Lower Hillmorton-road; house in Clifton-road; motor garage, Bennfield, North-street; and club room at rear of Rokeby Club in Market-street.

SALFORD.—A start is about to be made with the building of the super-generating station at Agecroft, on the site of which preparatory work has already been going on for some time. Councillor Billington, chairman of the Electricity Committee, puts the estimated cost of the enterprise at £709,287.

SKEGNESS.—At a meeting of the Foreshore Committee a letter was read from the representative of a powerful syndicate putting forward a proposal for the establishment of a large amusements park on the foreshore abutting the North Parade, just north of the pier. The scheme includes a scenic railway, river caves, and similar attractions on a first-class modern scale, and will involve the expenditure of several thousand pounds. The proposal is that the Council should co-operate with the syndicate, on a sharing basis. The area covered will be approximately 250 yards by 200 yards. The Council arranged to call a special meeting fully to consider the proposal.

TYNEMOUTH.—Plans passed by T.C.: Addition, 1, Beanley-crescent, for Mr. J. Riley; bay window, Northumberland-terrace, Tynemouth, by Messrs. Brown & Glover, for Councillor G. H. Miller; garage, back Cromwell-terrace, for Mr. Vella; semi-detached villas, King Edward-road, by Mr. J. R. Wallace, for Mr. H. D. Burton; addition, 6, South Preston-terrace, by Messrs. Hays & Gray, for Mr. Carrick; 16 semi-detached houses, Queen Alexandra-road, by Mr. W. Stockdale, for Mr. I. Smith; lavatories, etc., Christ Church School, by Mr. W. Stockdale, for Governors of School; addition to garage, Tynemouth-road, by Mr. W. Stockdale, for Messrs. Gray Bros.; warehouse, 66, Bredford-treet, by Messrs. Hays & Gray, for Mrs. Cragg; alterations to premises at corner of Victoria-crescent and John-street, Cullercoats, by Mr. H. Hill, for Mr. Butchart.

WALTHAM ABBEY.—Plans passed by U.D.C.: garage, Springfield-road, Sewardstonebury, for Mr. Windsor; stables, Spencers Farm, for Mr. Allen.

WIGTON.—The U.D.C. has approved of a sewerage scheme at a cost of £18,000. The proposal is to convey

* See also our List of Contracts, Competitions, etc.

the sewage of the town in pipes to the tidal waters of the Solway Firth, in the estuary of the River Waver.—The R.D.C. has passed plans for a cottage at Baurgh, for Mr. J. Barnes; and alteration to barn at Blennerhasset, for Mr. Moore.

WILLESDEN.—Plans passed by U.D.C.: motor garage, 92, Gladstone Park-gardens, Cricklewood, by Mr. F. W. Breaiy, for Mr. T. Botten; six dwelling-houses, 93, 95, 97, 99, 101, 103, Chatsworth-road, Cricklewood, with garages at 93, 95, 97, 99, 103, Chatsworth-road, for Mr. C. W. B. Simmonds; service block and Nurses Home, Willesden General Hospital, Harlesden-road, Willesden, by Messrs. Greenaway & Newberry, for the Trustees of the Hospital; addition, 104, Chichele-road, Cricklewood, for Mrs. E. A. Phipps Jackson; alterations, 11, Howard-road, Cricklewood, for Dr. J. B. Dunning; covering to yard, 1, Westbury-road, by Mr. H. Shaw, for Mr. Davis; alterations, 79, Carlton Vale, Kilburn, for Mr. Henry Saltmarsh; motor showroom and service depot, Edgware-road, by Mr. C. H. Paine, for Mr. F. G. Bradbury; additions to motor factory, Pound-lane, Willesden, by Mr. G. W. Atkinson, for Messrs. Studebacker, Ltd.

FIRES.

ABERYSTWYTH.—Extensive damage has been done by a fire which occurred on the premises of the North Cardiganshire Farmers' Co-operative Society.

BIRMINGHAM.—A fire has occured at the premises of S. Blanckensee & Son, silversmiths, Great Hampton-street.

COATBRIDGE.—As the result of an explosion, fire broke out within the meter-house at the Gasworks. The roof of the building was completely destroyed.

EDINBURGH.—A fire has occurred in the cooperage shop of the Croft-an-righ Brewery of Messrs. Steel, Coulson & Co. (Ltd.) at Abberyhill.

KELTY.—Fire broke out last week in the property belonging to Dick's Co-operative Institution at Main-street, and six dwelling-houses in the upper part of the building were destroyed.

LONG EATON.—A destructive fire has occurred at Trent College, the interior of three dormitories, dining hall, and a portion of the Shuker Senior House being practically gutted.

NORTH BERWICK.—A fire has occurred in the building owned by the Invercauld Industries, situated in Dirleton-avenue, whereby the entire building was destroyed.

PRESTON.—Damage estimated at £6,000 has been wrought by a fire at the garage of Mr. Percy Askew, motor proprietor, Strand-road.

REDHILL.—The saw mill and engine house at Messrs. Stenning's timber yard have been gutted by fire.

PATENTS.

*APPLICATIONS PUBLISHED.

176,054.—J. Macnaughton and W. T. Oldrieve: Roof construction.

176,082.—J. F. McDonald: Locks.

176,129.—W. Rixon, J. Howie, and W. Rowlands: Casement windows.

176,133.—M. M. Smith: Method of constructing walls.

176,242.—A. E. Cook: Sideboards and cabinets.

176,249.—W. Green and J H. Dean: Wall-tie.

176,275.—D. McLean: Construction of walling of buildings.

176,278.—A. A. Beswick: Castors and the means of securing the same to the legs of articles of furniture.

176,298.—W. Lees and B. Shore: Machines for wood-mortising.

176,405.—H. Frood: Composition applicable for use as floor coverings and for other purposes.

176,425.—C. Whittaker & Co., Ltd. and N. Whittaker: Feed mechanism for brick presses.

176,426.—C. Whittaker & Co., Ltd. and N. Whittaker: Brick-making machinery.

176,427.—F. H. Poppleton: rain-water gutters for building-structures.

176,463.—H. Hensman: Treatment of timber with gaseous fluid.

176,465.—C. L. Brown: Mixing-machines for concrete, mortar, paint, and other materials.

176,505.—H. S. Sever: Desks and tables.

176,554.—H. A. H. Lebus, S. Lebus, and L H. Lebus: Wardrobes and cupboards.

176,581.—W. Whittaker, Jun.: Fire-grates.

176, 589.—W. G. Heath: Device for supporting the shuttering employed in the construction of reinforced concrete and like floors, walls, and similar structures.

176,630.—F. W. Holman and M. O'Brien: Window-fastenings.

176,815.—W. Adair: Erection of concrete or such-like buildings.

176,868.—W. E. Clifton, J. S. Ewart, and Clifton Ewart Construction Co., Ltd.: Construction of concrete walls for buildings.

*All these applications are now in the stage in which opposition to the grant of Patents upon them may be made.

NOTICE TO DETERMINE MONTHLY TENANCY:

IT is curious how many points in connection with the law of landlord and tenant upon which some uncertainty has existed have come before the Courts in connection with the Increase of Rent Acts.

In our issue for May 5 we referred to the case Simmons *v.* Crossley, in which it was held that an ordinary monthly tenancy can be determined by reasonable notice and is not invalid simply because it expires on a day other than the last day of the monthly period calculated from the commencement of the tenancy. This case must be distinguished from the case Savory *v.* Bayley and Another recently reported in the Press. There mortgagees had taken possession of certain premises and had let them to the defendant Bayley, who converted them into flats, and had let one of the flats to the plaintiff "for one month of four weeks certain from March 8, 1920; the landlady agrees to give the tenant the option of continuing the tenancy on the same conditions at the end of the above term, subject to a month's notice (four weeks) being given by either party to this agreement."

There were some proceedings in connection with the Rent Act, but the point we refer to was not connected with them. The tenant had been given notice to quit, but the date on which that notice would expire was a Sunday, and the plaintiff contended that he was entitled to stay on until midnight of Monday. He was, however, forcibly ejected by the defendant Bayley about noon on Monday, and was now suing for damages.

The Court decided this case, not on the general law, but on the special terms of this agreement, explaining it was an agreement for "four weeks certain," and if not then determined was to continue subject to "four weeks' notice." The tenancy actually began "from March 8," which the Court held meant that it began on Tuesday, March 9, and the notice would have been valid if it had terminated the tenancy on a Tuesday or at midnight on the preceding Monday (Sidebottom *v.* Holland, 1851, Q.B. 378), but the notice given expired in fact on the Sunday and was bad, not because Sunday was an invalid day, but because under this agreement the notice must be such as to bring the tenancy to an end on a day which was a periodical occurrence of the day on which it began.

The question as to Sunday was not, therefore, decided, but it may be noted that some of the text-books on the law of landlord and tenant cite an old case, Sangster *v.* Noy (1867, 16 L.T. 157) to the effect that a notice to quit may be served on a Sunday.

Architects' and Surveyors' Assistants' Professional Union.

Mr. C. Clear took the chair at a meeting of the Newcastle and District Branch, held at the Y.M.C.A., Blackett-street, on Wednesday last week.

Reference was made to the overcrowded state of the profession by Mr. J. Mitchell, General Secretary, of London, who warned parents and guardians against placing children in any of the building professions. During the past year, he announced, over 2,000 youths from the schools entered the architectural professions. That figure was far in excess of the number which could be absorbed. Negotiations were being made with public and industrial offices with respect to the employment of professional assistants as clerical workers, such employment being deemed to be to the detriment of the status of professional assistants.

Mr. J. Smith was appointed local secretary, in succession to Mr. L. C. Fairbairn, who has left the city.

Premises in Leadenhall-street.

With reference to the premises in Leadenhall-street and Fenchurch-street, illustrated in our issue for June 23, Messrs. Ashby & Horner, Ltd., of 8, Aldgate, inform us that they carried out the hardwood panelling on this work.

TENDERS.

Communications for insertion under this heading should be addressed to "The Editor," and must reach him not later than Tuesday evening.

*Denotes *accepted*. † Denotes *provisionally accepted*.
‡ Denotes *recommended for acceptance*.
§ Denotes *accepted subject to modifications*.

ANSTRUTHER.—For erection of 10 houses (5 blocks) at Bankwell-road, for the T.C. Mr. C. F. Anderson, Architect and Surveyor, Town Hall, St. Andrews:—

*National Building Guild (Scottish Region), Glasgow	£6,178 14 6

BIRMINGHAM.—For carrying out strengthening works on the Hopton Brook siphon, for the T.C.:—

*W. Muirhead, Macdonald, Wilson & Co.	£13,191 16 10

BIRMINGHAM.—Provision of steel pipes for Water Committee:—

*Clayton, Sons & Co.	£6,722

BRISTOL.—For erection of a public convenience at Clifton Down, for the T.C. Mr. Lessel McKenzie, City Engineer, Bristol:—

F. E. Pardy, Ashley Mill	£3,500 0 0
A. & J. Tutcher, Bristol	3,435 0 0
T. H. Boddie, Bristol	3,011 0 0
S. Williams & Sons, Redfield	2,869 0 0
W. H. J. Sansum, Shirehampton	2,851 0 0
F. Chown, Montpelier	2,800 0 0
J. Perkins & Son, Ltd., Bristol	2,795 0 0
F. A. Woodward, St. Michaels	2,750 0 0
A. C. Stone & Co., Bristol	2,733 0 0
G. Slade, Lodway	2,640 13 10
Cullen & Trivett, Hotwells	2,576 1 6
C. A. Hayes & Son, Temple	2,494 18 6
John Knox, Bristol	2,488 0 0
F. Wilkins, Bristol	2,389 0 0
*E. Walters & Son, Montpelier	2,244 0 0

BRISTOL.—For erection of an inclined footway to Silverthorne-lane footbridge, for the T.C. Mr. Lessel S. McKenzie, City Engineer, 63, Queen-square, Bristol:—

John Knox, Bristol	£821 0 0
E. Walters & Son, Montpelier	768 10 0
C. A. Hayes & Son, Temple	609 17 6
J. Perkins & Son, Bristol	595 0 0
W. Cowlin & Son, St. Paul's	570 0 0
J. Lysaght, Ltd., St. Philip's	549 13 3
*Priest & Mullings, Ltd., Bristol	526 6 6

CHRISTCHURCH.—For laying two miles of 8 in. and 9 in. stoneware pipe sewers, &c., for the T.C. Mr. Henry J. Farmer, Borough Engineer, Town Hall, Christchurch:—

A. G. Osenton	£13,359 9 10
J. Mowlem & Co.	11,912 5 5
H. H. Barry	9,974 4 6
C. V. Buchan & Co., Ltd.	9,836 10 5
Coles Bros., Ltd.	9,689 13 5
W. Moss & Sons, Ltd.	8,793 13 11
H. Osman & Co.	8,689 13 5
Roads & Public Works, Ltd.	8,435 17 6
G. Riley	8,155 11 6
Crawford Bros.	8,134 1 0
E. Hobbs	8,095 18 3
Unit Construction Co., Ltd.	8,075 15 4
G. P. Trentham, Ltd.	8,000 0 0
Grounds & Newton	7,993 0 0
J. Cronk & Sons	7,907 15 11
A. Bird & Co.	7,767 6 4
H. C. Brixey & Co., Ltd.	7,315 17 11
*T. Pedrette	7,180 7 2
T. Bugbird & Sons	7,068 3 8

CHISWICK.—For ferro-concrete bridge over the London & South Western Railway, in connection with Chertsey Arterial Road. Mr. Edward Willis, Borough Surveyor, Chiswick:—

Playfair & Toole	£11,500 0 0
John Garrett & Son	14,240 0 0
Wilson Lovatt & Sons, Ltd.	12,250 0 9
Gray's Ferro Concrete Company	11,700 0 0
Baldry, Yerburgh & Hutchinson, Ltd.	11,635 16 0
W. Pattenson & Sons, Ltd.	11,212 0 0
Holloway Brothers (London), Ltd.	11,000 0 0
A. Jackaman & Son, Ltd.	10,775 0 0
The Yorkshire Hennebique Contracting Co., Ltd.	10,700 0 0
Davidson & Sykes, Ltd.	9,999 19 11
A. E. Farr	(a) 9,080 0 0
Chessums, Ltd.	9,854 0 0
Unit Construction Co.	9,836 14 0
Purdie, Lumsden & James, Ltd.	9,312 16 6
Walter Jones & Sons	8,413 0 0

(a) This amount did not include concrete under asphalte over the bridge, and was subsequently increased by £850 to £9,930.

CRICCIETH.—For erection of memorial hall. Messrs. O. Morris-Roberts & Son, architects, Portmadoc, North Wales:—

The Liverpool House Building Co., Liverpool	£16,297 0
W. F. Humphreys & Son, Acrefair, Ruabon	8,800 0
J. T. Jones, Abuerch, Pwllheli	8,690 0
Owen Parry, Pwllheli	8,526 0
Williams Bros., Brynkir	8,500 0
John W. Kent, Burslem	8,471 18
§John E. Williams, Criccieth	8,446 0

CLEETHORPES.—For construction of reinforced concrete bathing pool, for the U.D.C. Mr. L. W. Pye, Engineer and Surveyor, Council Offices, Cleethorpes :—

P. Fulcher, Cheltenham	£31,672	0	0
A. Mitchell, Ltd., Leeds	22,053	9	11
H. Arnold & Son, Ltd., Doncaster	20,916	0	0
W. Worthington, Ltd., Manchester	17,741	5	3
Hewins & Goodhand, Ltd., Grimsby	17,170	0	0
C. Brand & Son, London	16,882	12	11
Markwell, Holmes & Co., Ltd., Grimsby	15,995	0	0
A. Jackaman & Son, Ltd., Slough	15,741	0	0
W. Wrigh & Son, L'd., Lincoln	14,987	0	0
G. Bailey, Ltd., Newcastle-on-Tyne	14,386	13	5
F. Willers & Co., Bishop Auckland	14,353	9	6
W. Jones & Sons, London	13,052	6	7
*D. G. Somerville & Co., Ltd., London	12,985	2	10

HALIFAX.—For erection of electricity sub-stations at Siddal and Salterhebble, for the T.C. :—

*E. & T. Bower, Halifax	£385	15	

HORSHAM.—For repairs, &c., to farm cottages, for the U.D.C. :—

*G. Potter	£179	1	6

IPSWICH.—Erection of 52 houses on Racecourse site, for the T.C. :—

*Long & Whatling— Twenty-eight in concrete at £372 per house and the remainder at £389 per house.

JARROW.—Painting, &c., at the Central Council Schools and the St. Bede's R.C. Junior School. Mr. E. R. Knaggs, Clerk of Works, Central Council School, Jarrow :—

†T. Fraser, Jarrow	£276	10	3
*W. Moor, Jarrow	163	16	0

KING'S LYNN.—For (1) internal painting and colouring at St. James's Girls' and Junior Schools; (2) internal painting and decorating at Stanley Buildings; (3) repairs to stone staircase at Technical Institute. Mr. A. J. Smith, Borough Surveyor, King's Lynn :—

F. G. Piper & Sons, King's Lynn	£192	18	
C. F. Metcalf, King's Lynn	49	15	
E. J. Case, King's Lynn	39	6	

KINSALE.—For erection of 6 houses on the Barrack-street site, for the U.D.C. Mr. R. A. Hegarty, Town Clerk, Town Hall, Kinsale. Quantities by Mr. D. J. Twomey, Blackrock, Cork :—

*Coughlan Bros., Cork ..... per house £645

LINCOLN.—For extensions to pumping station. Messrs. Elliott & Brown, engineers, Burton Buildings, Nottingham :—

W. Pattinson & Sons, Sleaford	£44,880	0	0
A. Waddington & Son, Sheffield	32,265	0	0
Edwards & Co., Doncaster	30,256	0	7
A. H. Price & Co., Nottingham	28,987	13	0
Trollope & Colls, London	25,653	10	0
W. Moss & Sons, Loughborough	25,535	0	0
Thornhill Bros., Lincoln	24,541	0	0
A. Graham & Son, Huddersfield	24,500	0	0

LONDON.—For painting works at non-provided schools, for the L.C.C. :—

All Saints' C.E. (*Fulham, W.*)—*F. G. Minter, £270.
St. Andrews' C.E. (*Lambeth, N.*)—*G. Taylor & Sons, £500.
All Saints' C.E. (*Woolwich, W.*)—*J. H. Sutch & Son, £225.
St. Mary Boltons C.E. (*Kensington, S.*)—*W. Knight, £195.
Our Lady of Victories R.C. (*Kensington, S.*)—*W. Hussey, £103 15s.
St. Alban's (*Southwark, C.*)—*J. Marsland & Sons, Ltd., £440.
St. Mary's C.E. (*Hampstead*)—*M. Barrett, £398 10s.
Christ Church (*Clapham*)—*G. K. Howard, £194 5s. 6d.
Christ Church (*Hampstead*)—*C. B. King, Ltd., £348.
Eden-road Wesleyan (*Norwood*)—*S. White, £100.
St. Andrew's R.C. (*Streatham*)—*Yeoman, Spriggs & Co., £295.
St. James C.E. (*Hackney, C.*)—*Snewin Bros. & Co., £154 18s.
St. John's and All Saints' C.E. (*Lambeth, N.*)—*J. Parsons, £457.
St. Matthew's C.E. (*Islington, S.*)—Perry Bros, £277.
St. Paul's (*Shoreditch*)—*Elsdon & Son, £348 4s. 9d.
Brompton C.E. (*St. George's, Westminster*)—*W. Knight, £485.
Emmanuel (*Hampstead*)—*J. Maitland & Sons, £265.
Rochampton Parochial (*Putney*)—*W. Adkins & Son, £234 6s. 9d.
St. Patrick's R.C. (*Abbey, Westminster*)—*J. A. Hunt, Ltd., £371 1os.
St. Peter's C.E. (*Paddington, N.*)—*W. Chappell, £395.
St. James' Norlands C.E. (*Kensington, N.*)—*Lole & Co., £484.
St. Joseph's Practising (*Putney*)—*F. W. Martin & Sons, £142 10s.
St. Matthias (*Stoke Newington*)—*W. H. T. Kelland & Sons, Ltd., £284 10s.
St. Saviour's C.E. (*Paddington, N.*)—*Godson & Son, £465.
St. Saviour's C.E. (*Southwark, N.*)—*E. C. Sames & Co., £350 7s.
St. Stephen's C.E. (*Paddington, S.*)—*B. Colley & Sons, Ltd., £735.
St. Thomas Colet C.E. (*Mile End*)—*Elsdon & Son, £487.
Western C.E. (*St. Marylebone*)—*T. Press & Co., £445.

LONDON.—Tenders accepted by the Education Committee of the L.C.C. :—

Canonbury-road (*Islington, E.*)—Repairs to drains—*Bostels, Ltd., £240.
The Frogmore P.D. (*Putney*)—Structural alterations—*E. Triggs & Co., £538.
Ivydale-road (*Peckham*)—Repairs to drains—*Bostels, Ltd., £116.
Randall-place P.D. (*Greenwich*)—Provision of stock-room, &c.—*W. J. Dixon & Son, £197.
Sebbon-street (Myopic) (*Islington, S.*)—Repairs to premises—*I. C. Tennant & Co., £148.

For painting and cleaning work :—

Alexis-street (*Bermondsey, W.*)—*J. R. Sims, £696.
Bonner-street (*Bethnal Green, N.E.*)—*R. Woollaston & Co., £234 10s.
Bonneville-road (*Clapham*)—*J. L. Catterall & Sons, Ltd., £925.
Brecknock, The (*St. Pancras, S.E.*)—*W. Nicholson & Son, Ltd., £587 17s. 5d.
Broadwater-road (*Balham and Tooting*)—*R. Gibson, £335.
Cable-street housewifery centre (*Whitechapel and St. George's*)—*British Renovating Co., Ltd., £138.
Chester-road (*St. Pancras, N.*)—*H. Pickrill, £835.
Cork-street (*Camberwell, N.W.*)—*J. L. Catterall & Sons, Ltd., £272.
Cottenham-road (*Islington, N.*)—*H. Meckhonik, £330 10s.
Craven-park (*Hackney, N.*)—*A. Monk, £558.
Detmold-road (*Hackney, N.*)—*Stoneley & Co., £695.
Eardley-road (*Streatham*)—*A. Phelps & Wilton, Ltd., £307.
Gateforth-street (*St. Marylebone*)—*C. Berger, £298.
Hargrave-park (*Islington, N.*)—*J. C. Mather, £855.
Hitherfield-road (*Streatham*)—*Triggs & Co., £434.
Invicta, The (*Greenwich*)—*Finch & Finch, £542 4s.
Knapp-road (*Bow and Bromley*)—*The British Renovating Co., Ltd., £335.
Mandeville-street (*Hackney, N.*)—*C. P. Roberts & Co., Ltd., £896
Midway-place (*Rotherhithe*)—*W. Bailey, £414.
Oban-street (*Poplar, S.*)—*The British Renovating Co., Ltd., £466 17s.
Old Woolwich-road (*Greenwich*)—*W. Bailey, £499.
Orchard-street (*Hackney, S.*)—*J. & J. Dean, £325.
Pakeman-street (*Islington, E.*)—*Prestige & Co., Ltd., £343.
Peckham-park (*Peckham*)—*C. H. Gibson, Ltd., £390 17s.
Popham-road (*Islington, S.*)—*J. C. Mather, £99.
Queensmill-road (*Fulham, W.*)—*Lane Bros., £881.
Randall-place (*Greenwich*)—*J. Scott Fenn, £775 17s.
Ricardo-street (*Poplar, S.*)—*The British Renovating Co., Ltd., £375.
Rotherfield-street (*Islington, E.*)—*W. Lawrence & Son, Ltd., £325.
Smallwood-road (*Balham and Tooting*)—*Triggs & Co., £885.
The Snowfields (*Bermondsey, W.*)—*Lister & Co. (Builders), Ltd., £744.
South-grove (*Limehouse*)—*J. Stokes & Sons, £959.
Telferscot-road (*Clapham*)—*F. Stevens, £967 4s.
Torriano-avenue (*St. Pancras, N.*)—*W. Nicholson & Son, Ltd., £230.
The Wandle (*Wandsworth, C.*)—*G. W. Beattie, £794.

LONDON.—The L.C.C. has accepted further tenders for the equipment of the County Hall :—

Bronze mouldings to four marble panels in the Council chamber—

William Morris & Co., Ltd.	£508
Strode & Co., Ltd.	400
J. W. Singer & Sons, Ltd.	360
*Crittall Manufacturing Co., Ltd.	300

Bronze cases for eight radiators in the Council chamber—

Crittall Manufacturing Co., Ltd.	£890
Strode & Co., Ltd.	856
J. W. Singer & Sons, Ltd.	815
*William Morris & Co., Ltd.	712

Bronze rods and supports for curtains in Council chamber and bronze "Bar of the House"—

William Morris & Co., Ltd.	£545	0
J. W. Singer & Sons, Ltd.	430	0
Abercrombie & Son	309	0
Blunt & Wray	305	10
*The Birmingham Guild, Ltd.	250	0

Storage battery in connection with the electric annunciators and division bells—

Fuller's United Electric Works, Ltd.	£152	2	4
Tudor Accumulator Co., Ltd.	144	3	7
	143	18	7
Hart Accumulator Co., Ltd.	136	16	0
D.P. Battery Co., Ltd.	136	13	2
Pritchett & Gold & E.P.S. Co., Ltd.	134	19	0
*Chloride Electrical Storage Co., Ltd.	133	7	11

LONDON.—Supply of weighbridge at Falcon Wharf, for the Battersea B.C. :—

*S. Denison & Son	£355		

LONDON.—Supplying and fixing boiler at Laurie-grove baths, for the Deptford T.C. :—

*H. & T. Danks, Netherton	£1,065		

LONDON.—For demolition and renewal of foundations at Greenwich Power Station, for the L.C.C. :—

J. & C. Bowyer, Ltd., S.E.	£3,328
Holloway Bros. (London), Ltd., S.W.1	3,309
The Hydraulic Mining Cartridge Co., Bolton	3,300
Holland & Hannen & Cubitts, Ltd., W.C. 1	3,216
P. & W. Anderson, Ltd., W. 1	2,812
G. E. Wallis & Sons, Ltd., Maidstone	2,400
*John Mowlem & Co., Ltd., S.W. 1	1,156

LONDON.—For glazing roof of switchroom at Regent's Park Station, for the St. Pancras B.C. :—

*W. H. Heywood & Co.	£205		

LONDON.—For painting at Borough Engineer's office, for the Wandsworth B.C. :—

*W. Withers	£326		

LONDON.—For painting works at Balham and Wandsworth lib aries, for the Wandsworth B.C. :—

*W. Withers	£295		

LONDON.—For construction of boiler house at the generating station of the Hammersmith B.C. :—

W. Daley & Co.	£3,872	13	4
Aston Construction Co., Ltd.	3,562	0	0
Peirson & Co.	3,250	0	0
R. Merton Hughes	2,981	0	0
Structural Engineering Co.	2,958	0	0
W. H. Cooper	2,873	0	0
W. Walkerdine, Ltd.	2,862	0	0
James Lenn & Co.	2,727	0	0
John McManus, Ltd.	2,643	0	0
Leslie & Co., Ltd.	2,525	0	0
A. Roberts & Co., Ltd.	2,470	0	0
*W. Alban Richards & Co., Ltd.	2,021	0	0

LONDON.—Repairs to carriageways at Blackwall and Rotherhithe Tunnels, for the L.C.C. :—

J. Mowlem & Co., Ltd., S.W.1	£1,832	7	6
W. Peters, Stepney	1,741	12	5
W. H. Wheeler & Co., Ltd., S.E.1	1,654	11	6
*G. J. Anderson, Poplar	1,610	7	1

LONDON.—Supply of 3-ton locomotive crane at Battersea works, for the Metropolitan Water Board :—

*Taylor & Hubbard	£1,049		

MAIDSTONE.—For the external painting of the Town Hall, for the T.C. :—

*C. Walter	£110		

MAIDSTONE.—For painting at police station, for the T.C. :—

*Cox Bros.	£158		

METROPOLITAN ASYLUMS BOARD.—The following tenders have been received by the Metropolitan Asylums Board :—

Northern Hospital—Road and Tar Paving repairs—

†A. Thomson & Co., W.C.	£180	0	0

South-Eastern Ambulance Station—Cleaning and painting works and repairs—

W. Lilly & Co., S.W.	£499	0	0
J. S. Fenn, Woolwich	468	0	0
G. N. Harling & Son, Brockley	430	11	11
G. H. Miller & Co., Forest Gate	392	4	0
D. C. Bowyer, Belvedere	369	18	0
R. Haslam & Son, Woolwich	343	6	6
W. J. Dixon & Son, Bermondsey	337	0	0
O. Claydon, Beckenham	297	13	6
A. H. Inns, Bishopsgate	297	0	0
W. Bickerton, Catford	289	0	0
†H. A. Thomas & Son, Dulwich	229	0	0

North-Western Hospital—Cleaning and painting works—

Stevens & Sons, Highgate	£952	0	0
Worman & Hussey, Holland Park	932	0	0
H. A. Thomas & Son, Dulwich	882	0	0
J. W. Buckingham & Sons, St. John's Wood	860	0	0
A. H. Inns, Bishopsgate	847	0	0
†L. Kazak, Hampstead	795	0	0

North-Western Hospital—Installation of new steam and condense mains, &c., in concrete trench—

Brightside Foundry & Engineering Co., Ltd., S.E.	£977	9	0
J. Jeffreys & Co., Ltd., S.E.	872	0	0
Heywood & Brycett, S.E.	870	10	0
J. Cronk & Sons, Brixton	683	0	0
G. N. Haden & Sons, Ltd., W.C.	666	10	0
Dallow, Lambert & Co., Ltd., E.C.	659	0	0
Thames Bank (Blackfriars) Iron Co., Ltd., S.E.	590	0	0
Buckleys (London), Ltd., King's Cross	540	0	0
J. & F. May, W.C.	537	0	0
‡O. C. Summers, N.	519	0	0

Tooting Bec Mental Hospital extension—Installation of forced circulation, heating and hot water supply apparatus, &c.—

Hardware Trading Co., W.C.	£26,000	0	0
J. Blaikie & Sons, Ltd., W.	22,100	0	0
Cannon & Hefford, Peckham	22,000	0	0
R. H. & J. Pearson, W.	21,226	0	0
G. & E. Bradley, E.C.	19,989	0	0
Beaven & Sons, Ltd., S.W.	19,957	0	0
B. Finch & Co., Ltd., Lambeth	19,500	0	0
G. N. Haden & Sons, Ltd., W.C.	19,374	12	0
Strode & Co., Ltd., N.W.	18,887	0	0
J. & F. May, W.C.	18,729	0	0
Comyn, Ching & Co., Ltd., W.C.	18,480	0	0
Ed. Deane & Beal, Ltd., E.C.	18,235	0	0
O. C. Summers, N.	17,966	0	0
W. Griffiths, Sons & Cromwell, Ltd., Liverpool	17,950	0	0
J. Scott, Ltd., Bootle	17,922	0	0
Young, Austen & Young, W.C.	17,854	0	0
Brightside Foundry & Engineering Co., Ltd., S.E.	17,835	18	5
Brooks & Co., Southport	17,562	8	7
Buckleys (London), Ltd., King's Cross	17,300	0	0
Z. D. Berry & Sons, Westminster	15,959	0	0
A. E. Hatton, Kilburn	14,138	0	0

Tooting Bec Mental Hospital extension—Installation of electric lighting and power, telephones, fire alarms, and domestic bells—

J. R. Dunkley & Co., Huddersfield	£17,500	0	0
G. N. Haden & Sons, W.C.	13,500	0	0
Electrical Contracts & Maintenance Ltd., Westminster	11,920	0	0
"Watt" Electrical Co., Ltd., S.E.	10,000	0	0
Mann, Egerton & Co., Ltd., W.	8,654	19	1
Hall & Stinson, Ltd., Sheffield	8,526	0	0
J. Scott, Ltd., Bootle	8,314	0	0
Strode & Co., Ltd., N.W.	8,242	0	0
Toy & Winslow, S.W.	8,200	0	0
Cox-Walkers, Ltd., Darlington	8,040	0	0
Pinching & Walton, E.C.	7,812	3	0
County of London Electric Supply Co., Ltd., Putney	7,465	0	0
A. V. Gifkins & Co., Ltd., S.W.	7,250	0	0
Lund Bros. & Co., S.E.	7,150	0	0
Beaven & Sons, Ltd., S.W.	6,722	0	0
H. J. Cash & Co., Ltd., Westminster	6,639	0	0
Malcolm & Allan, Ltd., W.C.	6,415	17	6
Alpha Manufacturing Co., Balham	6,160	7	6
G. E. Taylor & Co., E.C.	5,990	0	0
S. Reed & Sons, S.E.	5,778	0	0
T. Clarke & Co., Ltd., Chelsea	5,300	0	0

Tooting Bec Mental Hospital extension—Patent glazing, &c., of eight verandahs—

A. H. Sheppard, Clapham	£516	9	3
Monk Bridge Construction Co., Ltd., York	419	17	8
British Challenge Glazing Co., Stratford	404	4	0
Wotton & Son, Croydon	389	0	0
‡Standard Patent Glazing Co., Ltd., Dewsbury	327	18	6

Brook Hospital—Internal cleaning and painting work and repairs—

G. N. Harling & Son, Brockley	£666	7	6
W. Lily & Co., S.W.	498	0	0
J. S. Fenn, Woolwich	467	18	0
H. A. Thomas & Son, Dulwich	423	15	0
W. J. Dixon & Son, Bermondsey	413	0	0
L. Kazak, Hampstead	400	0	0
W. Bickerton, Catford	399	10	0
D. C. Bowyer, Belvedere	384	9	0
A. H. Inns, Bishopsgate	358	0	0
‡R. Haslam & Son, Woolwich	240	10	0

North-Eastern Hospital—Cleaning, painting and repairs—

Stevens & Sons, Highgate	£1,346	0	0
Myall Bros., Ilford	1,202	0	0
G. H. Miller & Co., Forest Gate	1,096	6	9
Worman & Hussey, W.	887	0	0
Hensun & Co., Wood Green	880	0	0
L. Kazak, Hampstead	740	0	0
A. H. Inns, Bishopsgate	687	0	0
†H. A. Thomas & Son, Dulwich	526	17	0

Mead Works—Cleaning and painting—

Veronese (Proprietors, C.S. Co., Ltd.), Fulham	£681	12	0
Christian & Sinclair, Fulham	593	11	0
W. Lott & Son, Kensington	570	0	0
Mayfair Window Cleaning & Decorating Co., Ltd., W.	548	0	0
G. W. Beattis, Putney	488	0	0
C. D. Haddock, Bayswater	457	0	0
A. Pitkin, Fulham	442	12	6
L. Kazak, Hampstead	435	0	0
A. H. Inns, Bishopsgate	420	0	0
T. W. Heath, Ltd., S.W.	420	0	0
R. Haslam & Son, Woolwich	419	15	0
Worman & Hussey, Holland Park	326	0	0
‡H. A. Thomas & Son, Dulwich	300	0	0

For cleaning and painting work at S. Margaret's Hospital—

Whitbys	£175	0	0
C. H. Boyd & Son	137	0	0
‡L. Kazak	130	0	0

Mead Works—Extensions to electric lighting in the new offices, caretaker's quarters, and new stores—

Riddle & Goddard	£264	0	0
Electrical Contracts & Maintenance Co.	252	0	0
G. E. Taylor & Co.	193	16	3
Lever & Sons	190	0	0
†Toy & Winslow	180	0	0

NEWPORT (MON).—For alterations and additions to the public baths, for the Markets and Baths Committee. Mr. A. A. Newman, Town Clerk, Town Hall, Newport, Mon :—

†Unit Construction Co., Ltd., Birmingham, £7,126

ROTHERHAM.—For the erection of board room and offices, for the R.D.C. :—

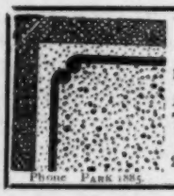
R. Sneil & Sons, Ltd., Rotherham	£9,971	3	8
Treherne, Ltd., Rotherham	8,092	16	9
G. Saul & Sons, Ltd., Rotherham	7,948	0	0
*Chadwick & Co., Ltd., Rotherham	7,549	0	0
Building Guild, Ltd., Manchester (less refund of 50 per cent. of saving)	7,241	13	5
G. & G. A. Pearson, Rotherham	7,126	14	1

STAINES.—For erection of 64 houses at Bedfont, Sipson, and Stanwell, for the R.D.C. Mr. G. W. Manning, Architect, Council Offices, London-road, Ashford :—

	Bedfont.	*Sipson.*	*Stanwell.*
A. C. Keen, Cranford	—	£17,464	—
Bateman & Sons, Harmondsworth	—	16,350	—
W. R. Gray, Heston	£14,965	—	—
Webb & Co., Ashford	13,118	—	£14,104
Y. J. Lovell & Son, Marlow	12,433	15,327	12,899
E. G. Sanders, Stanwell	—	—	11,860
W. A. Richards & Co., Shepherd's Bush	11,212	13,901	11,746
H. L. Boaler, Shepperton	10,734	12,899	11,465
The Unit Construction Co., Ltd., London	10,328	12,649	10,801
C. Groom, Sons & Co., Ltd., West Ealing	10,291	12,767	10,849
Royce Cook Construction Co., London	9,293	11,829	10,032
*Wood Bros., Forest Gate	9,042	11,387	9,615

SYDENHAM.—For alterations and additions to "Sunnydene," for Mrs. Sutton. Mr. G. Guy Rogers, architect, Wembley :—

*R. H. Powis, Wembley £5,500



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